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HOW TO ORGANIZE THE CURRICULUM



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HOW TO ORGANIZE THE CURRICULUM

BY

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PREFACE

The elementary curriculum has expanded in recent years into a huge collection of knowledge and of activities. Nearly all the subjects suitable for children and some others have been gathered from all sources until both teachers and children are overloaded with these bountiful gifts. At present they are staggering under the load.

The last thirty years has been a period of almost reckless expansion of common-school studies into all the new and old realms of experience. It may require the next thirty years to sift out and to organize these accumulated treasures.

Our problem is that of selecting and combining the best and most essential influences into a simple program which will promote the continuous educative growth of children through the school period.

CHARLES A. McMURRY.

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HOW TO ORGANIZE THE CURRICULUM

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CHAPTER I

HISTORY AND PRESENT STATUS OF THE CURRICULUM

The aim. — A good reason for reorganizing the course of study is the need for bringing our practice in education into conformity with our accepted principles. We wish to make it possible for teachers to realize the generally accepted aim of instruction. We desire to lead the children into the ways of good citizenship and into a wise physical and social, or moral, adjustment to the world that surrounds them. The present organization of the curriculum makes it needlessly difficult to attain these desirable results.

It is not our purpose, however, to enter upon a wholesale criticism of the course of study or of those who are responsible for it but to recognize the merits and to suggest a remedy for the faults.

Why revision of the curriculum is needed. — There are special reasons why the time is ripe for a revision of the general plan and organization of the elementary course of study below the high school. In recent years the common-school course has been a center of reform movements and has been reshaping itself under the

pressure of numerous powerful influences. These are indeed the chief active forces in the modern world, and they are claiming the right to mold such a public institution as the common school. Surprising and far-reaching changes have been the result. A survey of these changes and of their effects upon the course of study as a whole is first in order.

The most obvious of these changes is the increase in the number of new studies and in the variety of knowledge materials introduced. Year after year new studies, as strong claimants for attention, have been knocking for admission to the course, supported also by able and distinguished advocates. The school, in spite of strong conservative influences, has received them with open arms as they have come flocking in. At no time in the past has the school been deluged with such floods of new subject matter. We have also resorted to a variety of schemes and devices to enable teachers to qualify in the new subjects but with only partial success.

The pressure of new studies. — Looking back over a period of thirty years we easily can name the more prominent of these new claimants for public-school favor — nature study, the elements of science (including a wide range of worthy topics), manual training, now better known as industrial arts (including construction activities of several kinds), household arts (as many-sided as household needs), health and sanitation (closely allied to physical training, games, sports, etc.), home and school gardening and agriculture, civics and direct training for citizenship, modern languages (French, Spanish, and German), and vocational train-

ing along several lines. To these may be added new and important increments of subject matter in the older studies, as history, geography, literature, and the fine arts. Taken in the gross and collectively these radical enlargements and changes in a conservative institution like the public school are amazing. They will match up well with the astonishing changes in modern science, in inventions, and in the industries.

Surprising changes in the schoolroom. — The results are noted in the striking transformations observed in the classroom. Often in stepping into a modern schoolroom we are taken by surprise and think we may have entered the wrong place. It is a workshop with benches in the midst of sawdust and shavings and unfinished tasks, with machines and tools and busy workmen intent upon their noisy trade. Now again it is the quiet of a library with absorbed readers and stacks of books. Again it is a kitchen or serving room with active, aproned girls preparing a noon luncheon, or it may be a lecture hall for history, geography, or literature, with maps, pictures, and appropriate wall decorations, or the children may be making careful observations in a historical or geographical museum. Later it is an art studio with models and drawing furniture and equipment. Out in the open is a class of busy boys and girls in the garden, preparing the beds or planting. Again it is a broad playground with field equipment and ball diamond, swings, etc., or in a small theater the children in costume are presenting "Hiawatha" or "Merchant of Venice" with stage effects. Another class is in the science laboratory using microscopes as a means of discovery,

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or they may be handling test tubes in experimenting. An excursion into the woods and fields gives still another picture of a classroom enclosing all outdoors. In view of these novelties a primitive schoolmaster would be in a quandary. Even the methods of classroom management and teaching have been modified to conform to these external changes in subject matter and problems.

A genuine enrichment of studies. — There can be little doubt that the modern course of study is intended to furnish the children with a bountiful feast of knowledge and with the various activities in which this acquired knowledge is allowed to function in practical ways. The enrichment that has come into the course by the introduction of new branches of knowledge and forms of activity and by the enlargement of older studies aims at the superior content of these valuable subjects. In contrast with the formal, symbolic character of the old-fashioned course, the modern expansion of the curriculum deals with the best practical and cultural values and is therefore in its purpose a genuine enrichment. The common school has been absorbing and appropriating to its own uses the superior meanings and values represented by all the important influences and movements abroad in the modern world. This includes not only the political, social, and scientific reforming agencies at present dominant in the world but likewise the better influences coming as an inheritance from history and literature, from fine arts and religion.

By reason of its broad hospitality toward all studies and social forces the school has become thus the camp-

ing ground where we receive, train, and organize all the best forces in our society. The school is the one institution that is fully representative of the thoughts, the interests, and the activities of our whole nation at its best. The fuller meaning of this enrichment of elementary studies is not yet clear to many minds, because we are still under the traditional conception of elementary studies as being mainly formal and elementary and, we might add, trivial. But there is nothing trivial about this conception of an enriched curriculum of common-school studies. Educationally at least, if not in other respects, it is the greatest achievement of our age.

How to exploit this enriched course. — The doors have been thrown wide open for the admission of all the best studies and activities into the elementary school, and they are not likely to be closed. Education in the common school has taken on a much larger meaning and scope. The schoolmaster is called to a great office — to administer this enriched curriculum: first, to understand it in its potential values and, second, to organize the teaching influences so as to exploit these enlarged educational resources. In view of the future possibilities of this enriched course of study we may be excused for some boasting, but judged by achieved results we should need to be more modest in our claims regarding this actual enrichment. How to put these materials to the best use is the great problem.

A real impoverishment. — While we have been congratulating ourselves on the enlargement of the course with new studies and because of this modern reënforcement of strong thought materials from science and

literature and art, in very fact the school course as a whole shows unmistakable signs of a growing impoverishment. The important studies have become lean and barren, stripped largely of their better thought values. This is not the first time that educators have achieved results the exact opposite of what they had intended.

The course of study reduced to a table of contents. — The reasons for this, however, are easily given. We have now in the schools a troublesome multiplicity of studies. As we go on increasing the number of studies and topics, the time spent on each subject must be decreased. With twice as many studies on the docket each can receive only half as much time. In a complete up-to-date school we now have about sixteen or eighteen studies, twice as many as of old. A seventh grade class was reciting in eleven different subjects in one day. Five or six lessons a day would be far better. This multiplication of studies makes for short and scrappy treatment of topics. For important subjects the time allowed is wholly inadequate. Because of this shortage of time, teachers and textbooks are compelled to abbreviate and epitomize. Many of our textbooks in the middle and upper grades and in the high schools show this tendency to shorten and condense topics to a remarkable degree. This crowding of many studies upon the school program has produced a sketchy and superficial method of study. The whole course of study tends to become a memorized table of contents rather than an interesting and instructive development of knowledge. Stated in this form the result is simply distressing.

Such a condensed and overcrowded course of study breeds a host of evils. It leads both teachers and children into a bog where they fail to find sure footing. Crowded with this excessive variety of knowledge children lose confidence in themselves and look upon studies as a bore. They fall into a dull memorizing scheme of study that fits the requirements, while thinking and doing and all the higher activities are blighted. This fatal effort to condense knowledge actually fosters the two most serious blunders that can be made in teaching: First, it abolishes concrete illustrations and reasoning processes from instruction. Second, it imposes upon children the dry schedules and formularies of a sapless knowledge.

Impoverishment through condensation. — Our conclusion is that while our course of study has been flooded with this excess of riches brought by new subjects, the outcome is a steady deterioration through condensation of textbooks into outlines, summaries, and what may be called catalogues of topics; in other words, impoverishment of studies. The teachers are not mainly responsible for this result. All the chief forces in society have been busy on this work of loading up and then contracting the curriculum. The teachers and the children alike are the victims of an educational revolution. We have achieved results neither intended nor desired.

On the one hand, teachers have been trying in a feeble way to solve the problem by the elimination of nonessentials, while the children, on the other hand, in a speechless way have been convincing us that there is no use stuffing them with any more than they can

hold. After all, the capacity of children should have something to do with determining the proper limits of a course of study.

How to simplify and enrich. — One conclusion we are compelled to draw is that we are in the presence of a difficult and all-embracing educational problem. It may be formulated thus: How shall we simplify this greatly overexpanded course of study and at the same time preserve the best part of its richness and strength? It is a question of the selection and reorganization of knowledge materials in the now completed group of studies.

A simple course. — The conservatives demand a return to a simple curriculum, a few studies thoroughly mastered. They are still disposed to criticise the new studies as fads and to call for a return to the simple course of our fathers with a few tasks well done. We sympathize strongly with this demand for a simple, rigorous course of study.

An enriched course. — The progressives on the other hand demand the full acceptance of the new studies because they fit the needs and requirements of modern life. For three hundred years the reformers have been steadily advancing toward this goal. It would be impossible and ridiculous to go back to the old-fashioned and obsolete education of our grandfathers. It was formal and mechanical; the new studies are practical, thought-stimulating, and spiritual. They furnish the avenues of thought and culture and activity which lead directly into the modern world. We confess to a strong sympathy with this demand for an enriched modern course of study.

How may these two points of view be combined so as to work out a simple and enriched course of study? We shall undertake the further discussion of this problem in Chapter II.

The value of past experience. — Our discussion thus far has enabled us to see some of the outstanding merits of our present curriculum and to suggest some of its faults. We should not fail to recognize the value of the vantage ground offered by the present course of study with its vast accumulation of experience in studies, with its broad plans, and developed graded systems. All of our thinking rests back upon this foundation of past achievements. Any scheme of reorganization must deal almost entirely with these knowledge materials already collected and partially organized.

The proper aim has been set up. — Moreover the *aim* which is to dominate the education of the future has already been set and is now at work reshaping the present course. It seems probable also that the main principles of class instruction have been determined, in accord with which these knowledge materials are to be elaborated and appropriated by children. In our educational progress we seem to have reached a point which marks the full rounding out of the curriculum to its proper limits of expansion. We know the irresistible forces which lie behind this expansive movement and the complete scope of the democratic aim in the education of our people.

A survey of traditional organization. — Before suggesting any plan for the reorganization of the curriculum we must give a careful survey of such organization as

already prevails in the course. Long-standing tradition has built up a form of organization in the older studies, and this is the essential basis for the arrangement of topics in such studies as arithmetic, geography, grammar, and history — a traditional organization of individual studies. This scheme for the arrangement of studies came into vogue long before our modernized social aim in education was promulgated. It antedates our whole modern genetic psychology and was based upon supposed principles of learning and teaching distinctly contrary to the psychological ideas that are now dominant among educators and thinkers. As a result of this distant traditional origin of our course, it has been necessary from time to time to abandon certain antiquated and obsolete parts and arrangements of this course as in arithmetic, geography, history, and language.

Adult standards set up for children. — There are two seemingly valid objections to this old traditional order and arrangement of studies: First, the mature adult mind, from its own standpoint of complete, systematic knowledge, has shaped the course of study for children. Standing on his own matured platform of well-ordered knowledge the scholarly adult demands that the child rise at once to his level and accept his system of things. The idea that the child requires fifteen years of natural growth to reach that adult level is as nothing to this old-time curriculum maker. Child and adult are one and the same to him, and this is the attitude of the old psychology. Modern psychology assumes that the child is a very crude developing organism and has ahead of him both physically and

mentally a long evolution before reaching adulthood. The old course of study was brutally frank in requiring from the child just what an adult needed. Unfortunately our standard courses in history, geography, and arithmetic to-day are equally frank and brutal in satisfying adult requirements. We must admit, however, that the adult was innocent of any evil purpose. He did not realize the mischief he was doing in imposing his matured conclusions upon children. Our textbooks and our present course of study, with this demand for adult science inherited from tradition, lay a heavy handicap upon the child's mental movements. This explains why average textbooks are so consistently dull.

The offense against childhood. — The adult, when called to account on this score, defends himself by saying that he is requiring logical, systematic, scientific knowledge. So much greater the offense, for the child has not reached the logical, systematic, scientific stage! The materials thus furnished are well-ordered condensations of adult knowledge. The child will have none of this except under compulsion. Our present course of study is a perpetual offense to the child because of these condensations and final abstractions of the mature mind. Such a plan of studies held to consistently through the years of the common school is a systematic method of doing an endless amount of mischief. It sets the standard for a wrong method in classrooms and puts authority and administrative force behind it.

The lonesome isolation of each study. — Such traditional organization as we now find in the course is

an organization of individual studies, each upon its own independent basis. This is the general law to which there may be but few exceptions. This unsocial isolation of each study from others is not accidental but intentional. It is based upon an old traditional notion of a distinct function to be performed by each study, a special kind of mental discipline. Moreover the person chosen to arrange this single course in arithmetic or geography is selected because he is a specialist in this one subject and knows little about others. The notion of isolation is thus raised to the rank of a principle and has long been a distinct feature of the traditional course of study. The practical effect of this has been to emphasize this separateness of individual studies and to cut off the natural connections and associations among studies. This tendency to disintegrate knowledge and cut connections has gone still further even into individual studies, which are made up more or less of miscellaneous groups of individual facts and even of alphabetical lists and other outline catalogues of so-called important facts. It ends in a sort of final dissolution of knowledge into its ultimate elements — the facts. And in very truth a large part of the teaching done in schools to-day is a memorizing of these isolated facts without connection or meaning. This is the final negation of the concept — organization. It is a distinct and dominant mark of our present course.

Up to the present time these two notions of adult scholarship, or scientific knowledge, and of isolation of studies have mainly dominated over the selection and arrangement of knowledge materials. Strong op-

posing influences have been at work to break up this traditional scheme of studies, but the bulwarks of the old system still stand intact. The trouble is that no constructive principle has yet found general acceptance among educators upon which as a basis a reorganization of studies can be built. It is generally admitted that we need a closer correlation of studies and a stronger continuity of well-organized thought, extending longitudinally through all studies. Education should have a unity of purpose throughout and a steady, uninterrupted growth and organization of experience through the years. These are easy statements of general doctrine, but on what basis can this reorganization of studies take place?

The *culture epochs* idea seemed to offer some help. But it was vague in its implications. Being based upon the variable instincts and impulses of children in certain roughly defined epochs, it seemed to lack a definite intellectual basis. And yet this theory has been suggestive of some valuable experiments in education.

Some thirty years ago a more definite theory of concentration of studies based upon Herbart's doctrine of moral education received considerable attention but was never worked out in this country into any full course of study. It has gradually dropped out of sight.

A continuous accumulation of unsolved problems. — Educators have been very busy of late with other problems. During the last twenty-five years teachers have had their attention largely monopolized with the new studies that have been flocking in. They have

been so busy examining and discussing the new studies and trying to determine their credentials that they have relatively neglected the old studies and the larger problem of organizing the whole. It is difficult to determine the real educative value of new subjects and their proper relation to the older curriculum. The new subjects have added to the bulk of studies but have not been incorporated into any unified plan for the whole. In fact with these constant additions of new subjects, widely variant in content and value, backed by the above named principle of isolation, we have been piling up a bulky, miscellaneous collection of isolated, unordered studies which constitute a very serious and even threatening problem.

From this brief review it is clear that organization in the larger sense, that is, the proper selection, grouping, and interrelation of all subjects in the entire study movement through the grades, requiring coöperation of all forces toward one end, has scarcely been conceived as a problem. To talk of accomplishments in this field is therefore out of the question. Teachers have been at work on the separate minor problems in nature study or spelling or geography, etc., without any clear conception of a guiding principle for the whole.

No great organizer has appeared. — Although this problem is of such vast importance, it has not yet received the attention of any great organizer. Philosophers have dabbled in general theories about it, but no one has seriously attacked or even considered attacking this problem as a whole. Indeed, it is such an enormously big and complicated subject demanding ripe experience and broad, many-sided study that no

one has been so presumptuous as to assume the right of measuring his powers upon it.

We have had a generation of notable railroad and big-business organizers. Banking and trade organizations have been projected on a vast, world-embracing scope. But this scheme of organizing the best educative materials gathered from all the old and new studies into a wise, progressive, unified plan stretching through and dominating the whole assemblage of studies has never had a champion. No group of educational specialists has united upon any common plan for parceling out the particular phases of this great problem. It offers, indeed, a new field of specialization on the largest scale, and one worthy of the most aspiring and ambitious talent. What we usually call specialization individualizes the smaller departments of knowledge. What this problem requires is a new kind of specialization in the broader comprehensive relationships among studies embracing the entire course of study.

The old traditional studies are now organized upon an antiquated plan on the basis of a logical adult method and upon a sharp isolation of subjects — both ideas which are out of all harmony with our modern progressive social movement in education. The new studies have made very little progress toward organization. In these new fields teachers are groping about in uncertainty.

No sound basis for present grading of studies. — In spite of these untoward circumstances we have been busy working out a complete graded system and have assumed the right to dictate with precision just what

to do in each grade and even in each month and day of the year. We certainly need a well-ordered, flexible grading of school problems. But no system of grading is any better than the broad plan or lack of plan for organization that lies back of it. A grading system based on the present miscellaneous assemblage of studies is little better than a game of chance with blind leadership. Our graded system, therefore, is well stocked up with all the faults and errors which belong to our present haphazard yet arbitrary arrangement and disarrangement of studies.

A disturbed transition period. — It is not our purpose to give way to unfriendly and unbridled criticism but rather to explain these faults as the natural and inevitable marks of a difficult historical transition period through which we are now passing. The natural growth of our school system in close touch with a powerfully and rapidly developing civilization which it is trying to imitate and reproduce within itself has brought on a crisis. This straining effort of a vast, conservative institution like the American common school to constantly reshape itself into the spirit and methods of our rankly expanding democracy is a spectacle to behold. It is not strange that the schools have not kept up with these rapid changes. If the school could organize its resources to good advantage, if it could combine wisely the progressive and conservative spirit, it would do more than any other influence to maintain sanity and balance in the political, social, and industrial storms which threaten the public welfare.

We can well afford then to enter boldly upon a

thorough study of the faults and merits of our school system and to seek for the best organization of all its activities under a wise, comprehensive, and far-seeing plan.

The common school is unlimited in its intellectual and cultural values. — The elementary school, as noted before, has come into a great and valuable inheritance. The world's best knowledge and experience have been made accessible to the common school. Nothing is too good for the children. The most democratic institution in the world has become the chief center for refinement and utility and scholarship, put to the best uses. In other words our curriculum has outgrown its old narrow, formal limits. It has molted and come forth into a higher life. It is thoroughly respectable from the standpoint of many-sided and superior scholarship. Just as great a career is offered a first-class teacher in primary and intermediate grades as in a university department. These surprising phenomena of the higher life and activity, of aggressive learning and doing, have become every day, commonplace experiences in the elementary school.

The resources and possibilities of the school have been vastly increased by this recent enlargement of studies, this opening of the doors to the productive fields of thought and action. The resultant congestion of studies and confusion of knowledge is simply a new problem and must be wisely met by a comprehensive plan of reorganization. Before leaving this topic we must bring out still more clearly the demerits of the present curriculum, which must be dealt with in this reconstruction process.

A growing confusion. — In the first place the natural effect of the inroad of new studies is to produce more or less disturbance and confusion, to break up such settled uniformities as existed in the old program of studies, and to intersperse a variety of new materials somewhat shifting and irregular. The process of learning, with such a multitude of topics coming and going in this jumble of studies, becomes irregular and kaleidoscopic. It is too multifarious in its elements. It becomes bizarre and freakish in the variability of its materials. It resembles at times a curiosity shop with its collection of odds and ends. It is a mixed combination of things big and little, coarse and fine. In its *ensemble* it is confusing. It lacks simplicity.

Our artist friends tell us that in the case of interior decoration a house or room is artistic which has a few decorations combined into simple unity with a prevailing tone or idea. On the contrary when the walls are cluttered with a profusion of pictures and the room with a stunning show of furniture and bric-a-brac, its manifest simplicity and artistic unity vanish. The marked tendency of our course in recent years is toward an increasing and embarrassing complexity of studies. There is a continuous branching and re-branching until a summary of the recent history of our curriculum resembles a complex genealogical table. Such a mixed and miscellaneous collection of knowledge is necessarily distracting and confusing to the children. The diffusion of attention over such a wide range of short topics, with the consequent lack of emphasis on essentials, breaks up orderly thinking and cultivates even a fluttering and inconstant habit of thought.

Such results throw discredit upon the new studies and upon the whole modern scheme of expanding the curriculum.

Shifting phases in nature study. — The unstable and fluctuating quality of the new studies is well illustrated by the recent history of changes in nature study or elementary science. Twenty-five or thirty years ago a wave of enthusiasm spread among the schools over science and nature studies. Since then this problem has been constantly before us. From year to year teachers have shown a lively interest in its various shifting phases. For a time outdoor nature study in field, forest, and roadside was in high favor; then it was indoor experiment in the laboratory with physical and chemical apparatus; or it became weather study of sun and rain and winds and the use of thermometer and barometer; or it turned to health, hygiene, and sanitation; then came the school garden and agriculture; later the application of science to inventions and to material pursuits, soils and fertilizers, steam engines and motors, water powers, filtration plants, etc., came into vogue. Even geological excursions were taken with a study of rock forms and of the origin of coal, petroleum, etc. Science is such a vast and varied field that these perambulations in ever-new fields may continue for some time longer. Out of all this wealth and confusion of experience in science studies, who would now be bold enough to gather up results and lay down a simple, fundamental course in elementary science?

Facts on the throne; ideas in the gutter. — In the second place factual knowledge has come to ascend-

ency in our program of school work. Do you know the name of the capital of Van Dieman's land and of a crossroads town in Ohio? Have you memorized the list of words spelled with *ei* or those with *ie*? Can you repeat the names of rivers of northern Siberia? How many facts can you retail on a written examination with a time limit? Have you memorized the hundred important dates in American history and the names of the capes distributed along the coast of South America? Give the states that border on Armenia and the list of the signs of the Zodiac. Some hard-headed people think that facts are the *summum bonum* of an educational course. Facts are indeed necessary in every topic of study, but a mere enumeration of facts furnishes an astonishingly trivial and trifling outcome to a child's studious labors. Next to moral perversity one of the worst faults is this cramming of mere shallow facts. No matter how foolish, our present course of study and our prevailing method of teaching are built mainly upon this bare, unredeeming knowledge of facts. Many of us would be surprised, at this point, to look in upon the average school and take note of what is going on — the droning reiteration of mere dead facts. In such a plan of studies ideas drop completely into the background.

The false worship of facts. — This result, curiously, is due in part, as noted above, to our honest efforts to expand and enrich the course of study. This process of expansion, of multiplying studies, is also a process of contraction of each individual study, a necessary reduction of each study to its lowest elements — the facts. A fact stripped of its connections and bearings

is like Robinson Crusoe upon his lonely island — a mere stranded waif.

This emphasis of bare, lonesome facts as the main constituent of a curriculum sets up a standard of dull, lifeless materialism in teaching which is not only discouraging but unbearable. We can not subscribe to any such platform of studies. The term "materialism" is not strong enough to express the depressing effects of this kind of study course. The material objects about us in nature, the soil, the trees, even wood and stone, are embodiments of the forces operating in nature, but these dead factual materials in our course are deader than a doornail. A doornail is a very useful thing, but a dead meaningless fact is a pure aggravation. We must find for the children some means of escape from the tyranny of oppressive factual knowledge.

In the third place the knowledge gained through our present methods has a fixed, static quality which is strangely out of harmony with our modern conception of growth and progress. Our modern psychology is a discussion of thought movements based on currents of energy passing over nerve tracts. It is a process of growth and modification in habits. The child is a growing, changing organism, and even the habits formed must be flexible and adjustable.

Knowledge petrified. — In strange contrast to this notion of change and flexibility of thinking, our present course of study is usually looked upon as a fixed quantity of knowledge stuff, a definite amount of raw material that has been measured and weighed and parceled out. We have a number of terms in com-

mon use which naïvely express this universal habit of thinking knowledge as fixed and quantitative. We ask children to learn a list of the fifty most important cities of the United States. We speak of getting over so much ground in a month or a term or a year. We have *finished* our course in history or biology. We ask for the minimum essentials in grammar, *e.g.* just how many and what irregular verbs and homonyms to study. We desire to know just what and how much of each topic is required and whether or not we need to leave out the paragraphs in fine print.

This whole quantitative attitude toward knowledge is an offense against good thinking and against human nature, a slap in the face for intelligence and rationality. Thinking, judging, reasoning, and appreciation are not quantitative and can not be measured by such crude, material, absurd standards. There is a static element as a basis for knowledge because the mind must have something solid to step on, but all thinking is progressive, dynamic — and thinking is the essential thing. This *static* view of knowledge is what makes teaching and learning alike dull and unprofitable. All such lifeless knowledge lacks energy and motivation. It has no relation to life and activity in the outer world because there everything is in motion. Projects are in the process of being worked out.

The terms “factual” and “static” express two aspects of the same dull materialism in education. In combination they have fixed upon the school a depressing routine of studies that it is difficult to break up. True knowledge has in it a vital force that is, in contrast, essentially progressive and dynamic.

No centering upon social values. — In the fourth place as a sort of outcome to these deficiencies in the present course of study there is too much evidence of a serious defect in moral and social values. The strong tendency toward isolation of studies would break the backbone of any scheme to unify studies in the direction of a controlling social or moral aim. Marked isolation of studies is in itself a disintegrating, unsocial influence. But even in social studies like history and literature there is little or no effort to concentrate upon social problems. In industrial geography and applied science, where social projects are present and abundant and in just the suitable form, no effort is made to exploit such projects. Any true organization consists in finding the strategic centers of knowledge and then in focusing all studies more or less upon these centers. If the social aim is to dominate the curriculum, social ideas and activities of a superior, dominant quality must be found in the leading studies and made the central basis of organization. Little or nothing of this sort is discernible in our prevailing curriculum. If teachers aim at social results, it is not through organization of subjects around such social thought centers in the curriculum. The miscellaneous, factual, static materials of our present course are no guarantees whatever of moral or social influence. They are the opposite.

The results. — In concluding our strictures upon the present curriculum we note that such a plan of studies is systematically wasteful. It wears out the mental machinery by excessive friction. It dampens the ardor for knowledge. It produces a dull routine of

studies and yields a product of poorly organized or disorganized knowledge and faulty habits of thought.

The problem of reorganization. — In spite of these faults, and they are serious enough, our course of study has in it the vital elements of growing strength. It is directed to the right subject matter but without proper organization and enrichment through good materials close at hand. The full measure of its rich possibilities has been occasionally demonstrated and is daily becoming more apparent. The healthful strength and vigor of our school system are great enough to throw off the evil effects we have described. The tendencies toward a rational, progressive organization of school activities have been showing themselves clearly in many places. The great period of expansion of school studies, now completed, has delivered into our hands an abundance of good materials out of which to construct a better course of study. It remains to be seen what amount of foresight and wisdom we can bring to bear upon this problem of reorganizing the course of study upon a more comprehensive and efficient plan.

QUESTIONS FOR STUDY

1. In what way has the introduction of new studies influenced the school course?
2. Show the effects of condensation upon school subjects.
3. How far is it possible to both simplify and enrich the curriculum at the same time?
4. Formulate the commonly accepted aim of education.
5. Why are adult standards objectionable?
6. Are isolation and correlation opposing or complementary principles? Explain.
7. Describe the new kind of specialization that is called for in the study of education.

8. Why is the scholarship of the elementary school called "respectable"?
9. What is meant by the "present confusion of studies"?
10. Explain the expression, "the tyranny of factual knowledge."
11. Explain the *static* view of knowledge.
12. State what you understand by the *organization* of knowledge.
13. Describe briefly such organization as now prevails in the curriculum.
14. What conclusions of your own do you draw from this survey of the curriculum in its recent history and present status?

CHAPTER II

A POSITIVE BASIS FOR ORGANIZATION OF STUDIES

Organization in relation to the child's mode of thought. — The reasons pressing and almost forcing us to reorganize studies and activities have been suggested in the first chapter. We are now led to inquire, "What is meant by organization and how is it achieved?" Organization will need to be considered in several of its aspects, but the sort of organization that we now have chiefly in mind is that which shapes itself in the child's own thinking and in his developing habits of thought as he receives and appropriates knowledge for his own uses in the natural process of growth. It should not be merely a foreign, external scheme imposed upon the child by authority. At the same time the child's own processes of thinking should conform to and interpret the orderly arrangement of things in the world of nature and of society. Otherwise he can not live and prosper in this kind of world. To bring about this close conjunction of the child's native way of thinking with the ordered or conventionalized system of things in the outside world is a demand from which there seems to be no escape. This demand for adjustment between the child and the world lies at the roots of the educational problem and must somehow find a solution. The true organization of studies, therefore,

is that which presents the best elements of this world order in such a way as to stimulate the natural development of proper activities in children.

We are willing to accept the aim of education as already determined; namely, the growing of children into full citizenship, or the complete development of the child with proper adjustment to physical and social environment. We are prepared also to accept the present school studies, in the main, as indicating the scope of educative material required for attaining this aim. Our main problem then is to find and work out an effective organization of these studies on a sound teaching basis, looking steadily toward the achievement of this principal aim.

Organization means simplification. — Out of the mazes of our present complicated course of study, organization is the road that leads to simplification. When a lot of objects are thrown into confusion, we call for organization to set them to rights and to bring them under easy control, as a heap of books to be classified or miscellaneous papers to be arranged and filed. The influx of miscellaneous studies has produced a general congestion and mix-up which calls for simplification. The only possible antidote to miscellaneousness and confusion in our present overcrowded curriculum is organization on some simple basis. Just at this point where our education has been showing a marked tendency to spread out in all directions over the limitless flats of knowledge, we hear a sharp call to reorganize studies on some large and simple plan. This relief from prolixity and confusion is demanded in the interest of teachers and of children, to say

nothing of educational efficiency for general social purposes.

Organization is an emphasis of thought relations between facts. — In a simple, downright sense organization is an emphasis of the *thought relations* that bind together the different parts of knowledge and group them into larger wholes and into ultimate unity. Without these connections, the materials of knowledge become a rope of sand, a mere confused wreckage. The simplest processes in life illustrate this necessity for tying things together. We can not build a table without joints, or a house without structural bonds, or a brick wall without mortar. And yet, strange to say, a large part of the information in our present course is isolated and disconnected and almost lacking in those simple thought relations which give a common meaning and value to large groups of facts. This is surely one of the absurdities in our present plan or lack of plan in studies. In this respect our curriculum is in the primitive stage of those prehistoric races that built stone walls without binding cement. There is no more fundamental doctrine among psychologists and thinkers than the truth that thought relations between facts constitute the essence of knowledge. And yet it is common practice in our schools to encourage children to memorize batches and catalogues of disconnected facts. Indeed, we often pride ourselves on such exercises.

The search for thought centers. — It is the essence of organization to establish also strong centers as well as extended continuity of thought relations. Organization is a purely reasoned-out thought process con-

necting the parts of knowledge together and is, therefore, strongest at the important thought centers where knowledge is rich and deep. There seems to be no good way of organizing except by getting at thought centers, and without organization these natural, fruitful centers of thought become the very worst centers of confusion; just as traffic at the most crowded street corners, if unregulated, becomes most confused. The remarkable enrichment of our curriculum in recent years, without corresponding organization, has brought on at many points just this kind of confusion, and the greater the enrichment of studies the greater the confusion. We have already begun the sifting-out process — the search for the real centers of organization. As fast as these rallying points come into clear view, we should shift our efforts to them as mobilizing centers. It is a large enterprise, but it expresses and brings into one central problem the school need of our time.

The old formal outline of studies is now obsolete. — The past still has its firm grip upon the school system and binds us to a scheme of isolated, broken, and fragmentary studies, which satisfied the conditions of a former age. We are now in the very act of outgrowing this cumbersome system. We shall not escape from the old shell without a strenuous and wrenching process. The schools have been holding on tenaciously to the formal classifications and outlines of an obsolete system of grouping. The traditional tendency to classify and condense knowledge with its depressing effect has laid violent hands even upon the new content studies, stripped them of their best content, and left

them little better than skeletons. Such outlines, by whatever respectable names they may be called, are little better than dried mummies and ought to be preserved in a museum, not in a course of study. They are like the empty shells cast up by the waves, from which life has long since departed. But the energetic life principle found in all great studies⁷ is after all the chief thing. It is the sentient element, the soul of good instruction. We can not afford to expel this good spirit, this animating intelligence, from the course of study. Our epitomized curriculum is like a sucked orange. It is easy to answer by saying, "Enlarge and fill out this outline." The rebuttal, however, to this statement is complete and overwhelming; namely, "Teachers have neither time nor materials with which to fill out this far too extensive outline."

This adult frame-up of studies not suitable for children. — We have then a kind of organization in the older studies, a left-over from the past, which still holds its place and dominates the school curriculum through the powerful influence of long-established tradition and routine. It is what was mentioned in Chapter I as the logical order of the mature scholarly mind. It is admittedly wrong because it frames up the course of study artificially out of the matured classifications which are the peculiar products of the adult trained mind. It ignores the fact that children are yet to be educated and do not begin where their fathers left off at the latter end of a full course in education. They must begin at its crude starting point, where children have little regard or capacity for the wise proverbs and scientific generalities of their elders. It has taken

the adult world an inordinately long time to find out that this stilted, Pharisaical wisdom of adult thinkers, in form and content, is the essence of foolishness to children. In fact, while this conclusion is generally accepted by educational experts as based on sound general theory, it has not yet produced any considerable change in the traditional curriculum.

The pursuit of knowledge should be a coöperative companionship. — In planning the attack upon school studies, teachers should reflect not only upon the natural organizations of the school subjects, but they should also survey the whole field of knowledge from the standpoint of children in their first wondering approaches to the different subjects. Teachers should learn in humility and wise adjustment to climb the hill of knowledge with children instead of coldly dictating to them the final matured results of their own previous explorations. This does not imply that children should be left without guidance, the teacher tagging along behind, as it were, and allowing the children to stumble into all sorts of brambles and swamps until they become totally bewildered. Clearly defined aims and objectives should be kept before children as guiding landmarks, and they should come out from time to time into an open space with a clear and intelligent view of their surroundings. Teaching is a fine, tactful, coöperative effort between teacher and pupils in the forward march into knowledge. Otherwise we could get along without teachers and courses of study. De Soto's almost helpless wandering through the Southern States in a vain search for gold is not a good example for children to follow in their studies. There was too

little of intelligent guidance. Daniel Boone in his old age^{er} was asked whether he ever got lost in his lonely wanderings in the vast forests and canebrakes of the West. "Well, no," he replied, "not exactly lost, but once for three days I was much bewildered." The danger of the badly arranged and poorly handled course of study is that children may be kept in a state of bewilderment.

A direct attack upon the curriculum changed to a flank movement. — Educators naturally hesitate and call a halt before this extraordinary problem of reorganizing the curriculum on a new and larger plan. In the growth of big cities large, expensive six-story buildings have to be torn down to make room for much larger structures. Our present course of study is one of these expensive old buildings, and we hesitate^{to} to lay hands upon it. Instead of directly attacking this problem of reconstructing the course on a larger plan and on a positive basis of organization around important thought centers, some of our leaders have attempted a flank movement. They have turned aside to a largely negative effort to determine the essentials by a process of elimination. This interesting and profitable experiment has been going on for ten or twelve years, and we can now estimate the results. Trivial and obsolete topics and mere facts have been dropped out. Such elimination of nonessentials is well worthy of full consideration. In arithmetic, language, and spelling, valuable reductions in subject matter have been made. More recently the standards established by the tests and measurements have drawn the lines of elimination still more sharply around the chief

formal studies, including also early reading. Thus far this revision of the course by elimination has been limited chiefly to the formal studies, but it is now making some inroads into history and geography and other content studies.

This movement to eliminate nonessentials and to reduce the course to what is now commonly called "minimum essentials" has done great service and will yet add much to its credit. As this movement goes on, it will help to expose more and more the grinning skeleton that now stands in the center of our curriculum.

Elimination has not removed the congestion in studies. — In spite of its achievements this movement toward elimination has left us with an awkwardly overgrown course of study. Other powerful influences have more than counteracted the benefits of elimination. Because of strong conservative influences which have kept the old studies largely intact, the excessive quantity of this older knowledge has not been adequately reduced while the quantity of fresh material in the new studies has been enormously increased. Even a much larger reduction in the mere quantity of knowledge would not overcome the present congestion of studies. A much more radical lopping off of topics and a ruthless pruning out of subjects would still bring a much desired relief as to quantity, but the residue would have in it the same old faults, except bulkiness, as the present course. The more fundamental faults would remain, such as poor organization, feeble thought, and lack of content connections. This procedure reminds us of the old medical practice of

drawing off the excess blood with the idea of getting rid of the pestiferous infections of the body. The blood left in the body had the same qualities and harbored the same evils as before, while the system as a whole was weakened.

Mere quantitative reduction a failure. — This quantitative reduction of subject matter in studies to minimum essentials has also a powerful tendency to end rather in a collection of dry abstractions, and these properly joined together furnish us with the “grinning skeleton” of a course of study referred to above. We can afford to do almost anything to escape from such a tragedy. Let us pray that our last end be not like this. Reduction through elimination to minimum essentials will indeed decrease the quantity of knowledge, but it must guard against the greater danger of debasing the quality of knowledge. The worst thing about our present course of study is the poor quality of its educative materials and their plain lack of right organization.

The high quality of thought materials ranks first. — In the reorganization of our course of study in a liberal, comprehensive sense the high intellectual and moral quality of the educative materials takes first rank, is indeed the prime consideration. Quantity is not merely secondary; it is far down in the scale of values. Quantitatively considered, we have enough material to make a dozen respectable courses of study. But qualitatively we ought to be held to a rigid, persevering search for the best, which is not overabundant. Around the important centers we plan to organize all that is most essential for the purposes of life. Minimum

essentials on the basis of high quality furnish an excellent and safe standpoint for the reorganization of studies.

The debasing influence of the quantitative idea in education. — Because of the overcrowding of new and old studies in recent years the quantitative idea has largely dominated all discussions of the curriculum, and the question of quality has played second or third fiddle. Superintendents and curriculum makers have laid down the law and teachers everywhere have been distressed and burdened by quantitative requirements. No question has been asked more frequently than this, "How can my children get over so much ground?" Indeed this furnishes the motive for all our talk about elimination and reorganization. This excessive worry and struggle over the quantity of knowledge has been thoroughly misleading and has almost blinded our eyes to the real nature of our problem and has completely debased our thoughts on education. As if education were a matter of facts or of information or of any sort of stuff that can be measured quantitatively! God save the mark! The quality of knowledge stands first. Who has dared to lay unhallowed hands upon this sacred thing, this curriculum of studies for all the children? Who has ventured to corrupt the public mind with this vicious heresy of quantitative knowledge and dump the whole school system into a pit? The whole purpose of the school is to elevate and enlighten, to enrich thought, not to depress. We can never be brought to give our consent to this low standard for measuring the values of school studies. There is no reason why the noble structure of our public education should be torn down.

A discouraging aspect of the problem. — If we thus object to the poor quality of knowledge and reject the traditional faulty organization of subjects in our present course, where shall we look for something better? We would naturally consult the world's past experiences with courses of study and the helpful principles of education which this experience has brought to light. The experience of the modern nations with elementary education is extensive and has many valuable lessons to teach. But the present transition period shows such an accumulation of problems, such a multiplicity and congestion of knowledge materials, new and old, and such a wide divergence of opinion among educators, that even careful students of education have been discouraged by the outlook. They are almost persuaded that our theories and our accepted principles have failed us in this pinch.

The *Fourteenth Yearbook of the National Society for the Study of Education* expresses this discouragement as follows, "If it is impossible to discover from educational theory fundamental tests for exclusion and inclusion, we are driven to the method of determining minimum essentials on the basis of the best current practice and experimentation which give satisfactory results. Those results are satisfactory which meet adequately the common needs of society. This in the main is the method employed in the investigations upon which the following reports in the yearbook are based."

We have sound principles but fail to apply them. — This resort to the best practice and to wise experimentation is always in order and can not be too much

encouraged and supported. But the abandonment of rational theory and of deliberate reflection on the basis of accepted principles is hasty and pessimistic. It overlooks for the moment our vast educational resources and achievements in psychology, in history of education, and in pedagogy. The root of the difficulty lies not in our lack of sound principles but in our failure to use intelligently and to apply consistently well-recognized principles.

All things considered, our worst fault in education is the almost common tendency to stop short with the proclaiming of sound principles, and then altogether to neglect practice. Our current practice both in making curricula and in teaching is very far behind our best theory.

Our assets are large. — The reorganization of our course of study is a problem too serious and complicated to be clearly stated in a paragraph. While the basal idea may be simple, its application to the varied activities and studies of the entire school is so broad in scope that a whole book can be little more than an introduction to the problem. We may now confidently assume that we have at hand the principal data upon which to try out a solution of this great problem. The resources now at our command consist: first, in a complete circle of great and essential studies; second, in a fairly adequate knowledge of children and their needs; and third, in a body of sound educational principles which may serve as guides in laying out the plan.

Present faults of the curriculum stated. — Experience and reflection have revealed the more serious

faults in the prevailing course of study. They may be stated again briefly as follows: an overcrowding of the course with a bizarre collection of materials from all studies, old and new; the traditional isolation of studies from one another and from life; a steady condensation and withering up of studies into dull generalities; a waste of time upon trivial, miscellaneous, and obsolete topics; the static, factual, almost meaningless quality of much of the study material; a system of wearisome repetitions of the same topics from grade to grade; and, broadly, an obsolete plan of organization into separate individual studies. The plan as a whole tends toward the formal and schematic in contrast to concrete imagery and lively thought. In the language of whist, such a course has a hand full of small cards of different suits but is very short on aces and kings.

The remedy for these faults is at hand. — We know the changes and improvements on the other hand that would offset these faults, the chief of which is a radical simplification of the course by establishing a few thought centers in each of the important studies. This demands a preliminary survey of all studies to determine basal thought values. As a result knowledge will organize itself into larger teaching units to correspond to the trend of these dominant ideas. The establishment of a close continuity of thought relations between large topics from grade to grade is the proper outcome of these growing constructive ideas. The necessary overlapping of big units upon other related subjects takes care of the problem of correlation. The elimination of trivial and obsolete data is the inevitable fate of these

intruders under the law of the survival of the fittest. The definite grouping of knowledge around social and industrial projects draws all studies into the current of life and gives chief emphasis to human interests and values. Such a course of study can be constructed only upon a large framework of strong and simple ideas. Can a reconstruction of the curriculum be effected in such a way as to correct the faults and give opportunity to realize the improvements above named?

Organizing centers. — Every serious assault upon this problem of the curriculum rebounds with the same questions, "What are the simple centers of organization? What are the consolidation points where the superabundant materials of old and new studies may be combined into simplicity and strength?" After years of accumulation we have gathered from all sources a full complement of knowledge materials, in fact, an overplus. The one thing lacking is a clear view of the centers of organization and of their relation to the aim of education.

A new era demanding a radical reorganization. — A new era has dawned upon us in curriculum making. The old narrow conception of mechanical drills upon sharply isolated studies is wholly inadequate and out-of-date. The expanded and multiplex course of study demands a more comprehensive conception of large organization about vital centers and a broader relationship and coöperation among studies. The recent introduction of larger, more deliberate thought problems, embraced in literary masterpieces and in larger social projects from history, geography, and applied science, has established the demand for deeper, more connected

thought movements in study. The opportunity is thus given for a new and extensive coöperation among studies extending crosswise and lengthwise through the curriculum. The old narrow, formal order is rapidly passing, and a new expanding world order and organization in richer fields of knowledge has opened up. Our ideas and our principles must expand to the full dimensions of this larger compass and grouping of educative materials. An illiberal conservatism can no longer hold in check this demand for a radical reorganization of studies. Lowell says,

New Occasions teach new duties, Time
Makes ancient good uncouth,
They must upward still and onward
Who would keep abreast of truth.

Reorganization on the basis of life projects. — This swelling increment of new studies, which has already had such a transforming influence, has been imposed upon the school by powerful and salutary influences from without. Such forces are destined to grow stronger. The problem is how to combine to best advantage the newer and richer content studies with the older formal studies. By appropriating to its own uses the new life forces and typical projects from the active world, the school itself has been growing into a worldlikeness. It is becoming more and more a duplicate of organized life processes and activities. In this fact also lies a large part of the solution now proposed for our problem of reorganization.

The Panama Canal shows organization on a life basis. — One of the notable demonstrations of organization developed on a large scale under life conditions

was seen in the project for planning and building the Panama Canal. On the basis of an extensive accumulation of necessary practical knowledge, drawn from history, geography, and applied science, this vast project was systematically planned; a whole army of skilled workmen and unskilled laborers brought together; machines and materials collected; and all these forces combined and organized into a successful execution of the project.

The coöperation of all the parts of a vast machinery of construction under a wise overhead control and extending through a period of years was necessary. This is an illustration of extensive and many-sided knowledge and practical experience brought together and focused upon a single purpose — the economical execution of the Canal project. Essential to this purpose and its execution was a well-developed plan based upon complete and well-applied scientific knowledge.

Wise and purposeful organization characteristic of big business. — This kind of thorough, practical organization of knowledge gathered and focused upon a purposeful project is characteristic nowadays of big business, indeed of all large and successful industrial and social enterprises. The extent, variety, and absolute necessity for such genuine organization may be understood from a selective survey of the following list of big enterprises:

The Panama Canal

A Large Cotton Plantation in Mississippi

The New York Mutual Life Insurance Company

The Congressional Library at Washington

The Pennsylvania Railroad System

The Red Cross Society
The Steelworks of South Chicago
The New York Times
The Standard Oil Company
The University of Illinois
The Post Office System of the United States
The City Government of Indianapolis
The Macmillan Company
The Cunard Steamship Company
Sears, Roebuck & Co.

This list could be indefinitely extended, each case demonstrating the actual power and the necessity for practical, efficient, large organization.

Such practical organizations are models for teachers to study. — In each of these projects we observe not only an organization of knowledge but also of human agencies and material resources, essential to the execution of a comprehensive plan. This is knowledge arranged with reference to human and social needs and guided by intelligent purpose. It is the immediate and vital combination of the theoretical and the practical. Perhaps this is the very best kind of organization that the teacher can discover anywhere and take up for serious study. Many of the large topics recently incorporated into school work have been lifted directly out of life with the full impress of life organization still upon them; for example, building the Erie Canal, managing a wheat farm in North Dakota, the production of the Pittsburgh steelworks, the activity of the Red Cross Society, the power plant at Niagara. These projects lie also in the very field of study with which the teacher and children are most concerned. This business and social world constitutes the children's

actual environment and furnishes the very channels in which the future activities of these children are to be engaged. These business and social problems, as worked out in life, are the chief concern of society and of the child himself as fast as he grows into his social inheritance of experience and of knowledge.

Practical enterprises are built on strong rational thinking. — The more we contemplate such life organizations, the more we are impressed with the conviction that simple rational thought is the dominant principle of such practical arrangements of knowledge, that ideas, as Plato said, are the most powerful realities. Every one of these successful projects is the translation of some important idea into terms of life activity; and so the idea as an energizing principle organizes the human and material forces into an agency for human welfare. (See Chapter IV.)

The kind of organization needed in the curriculum. — By a consideration of these examples we may find out not only what real organization is but perhaps also the special kind of organization which teachers may wisely choose as a guide in instruction. Organization based upon industrial and social ideas, embodied in life projects as strategic centers upon which the world's activities are already focused, may furnish a basal principle upon which we shall construct a course of study.

Perhaps this outer world, by means of such system and order as it has tested out and found essential in its everyday processes, can furnish at the same time both the raw materials (the sensory basis of all knowledge) and the effective organization of these materials. This might be very helpful to the teacher who has thus far

been unsuccessful in finding or in inventing a suitable organization. This useful world order, already tested out, may prove a great find to the curriculum maker. It may be that long-sought point of contact between the child's life and the world life which will combine the two into one for teaching purposes. It should be the wise intent of those who lay out courses of study for the school to take accurate note of these serviceable organizations of knowledge already provided and even to incorporate them as suitable units of effort into the larger plan of education. If the course of study were likened to a railway system, these large projects would be the principal stations along the trunk line.

Main features of organization seen in life projects. — An analysis of any one of these enterprises which shows the grouping of life forces upon the execution of a project will bring to notice the following features:

1. An organizing idea is seen at work as embodied in some person or agency.
2. A collection and grouping of workers is found under overhead control whose efforts are directed toward some central social purpose.
A full social coöperation of all these means and instruments in a rational mode of procedure is observed looking forward toward a definite achievement.
3. The result is a powerful, active, successful, and unified agency for carrying on the world's work.
4. The plan of organization wrought into one of these business or social enterprises by the force of circumstances in a practical life setting gives the teacher a strong hint as to correct method.

The long persistent search for the natural order in studies. — What particular suggestion then is the teacher to get from these practical projects for his own plan and method in organizing study materials? For many years the search has been going on for a natural order in studies — for the child's own way of approach to world knowledge. Teachers for generations have been at work making textbooks on the basis of what they conceived to be the proper order in learning. Writers on education never tire of delivering theories on this subject. In spite of many honest efforts in this direction most of the schemes offered prove to be artificial rather than natural or spontaneous. The school, notwithstanding many excellent qualities and many actual improvements in classroom method, still has a way of making instruction stilted and formal and unnatural.

Searching in the wrong place. — At this point we wish to suggest again that we may have been searching in the wrong place for the real pedagogical order in the growth and organization of knowledge. We have been looking for it in textbooks and in plans originated by teachers and writers on education. We may find it somewhere else, where intelligent people are at work doing things and are not thinking about pedagogy at all. In other words we do not become natural by trying painfully to be natural. We must catch some one unawares who is doing things in the natural orderly way. And so we shall have to get away from the schoolmaster with his cut and dried, artificial, and often arbitrary schemes. We must go out into the world where people are working out urgent, absorbing problems.

The schoolmaster has made the mistake of thinking that he must systematize the world, set it in order, and then dole out his system in fragments to the child. Such schemes have proved unnatural and arbitrary. We must seek elsewhere an organization more natural and suitable to children. The unschooled world itself in nature and in society is built on a far better plan — a plan expressing the world's well-wrought-out wisdom in simple, concrete, and practical ways. These important object lessons in applied knowledge already organized stand waiting for the child just outside the school door. They are fundamental types, exhibiting to all in a large open setting the chief labors and doings of men in the social or industrial world and in nature's own operations on a large scale.

The sensory basis of knowledge. — It has been long known that we must get over the fence into real life to gather the facts and sensory experiences which are needed to reënforce the verbal school exercises. For three hundred years since Comenius' time the school has been coming closer to the outside world and has been more and more drawing into its domain the realistic experiences from without. Now at last, to make this development complete, we have in the school shops and gymnasiums, kitchens and museums, playgrounds and outdoor excursions, gardens, school theaters, and dancing. The old-fashioned school with its droning lessons has been almost lost to sight among these busy intelligent activities.

The organization of knowledge already prepared in life. — Are we ready for another great surprise; namely, that the natural organization of knowledge for teaching

purposes which we have been vainly searching for among dusty schoolbooks and cobweb theories is already prepared for us and is in active operation in the busy world just outside of the school? This might be the discovery of a real pragmatism in education.

The schoolmaster then has not been wise enough to discover the pedagogical method and approach to knowledge, but the people in the active world outside of the school, who do not understand the use and meaning of pedagogical terms, have already worked out the problem successfully in their important business, industrial, and social enterprises. It is this unconscious wisdom of diligent and thoughtful workers in the midst of life's problems dealing successfully with (pedagogical) business and social questions that we wish to acquire.

Example of organization in the railroad business. — Practical men and women in life have been at work a long time organizing their occupations into effective processes, inventing devices and machines for executing their work in the best natural order. If you desire to understand railroading, work out the history of one of the early railroads from its crude beginnings to the present. Study the gradual growth, the important improvements and expanding organization of a single railroad line as it develops into a great system, *e.g.* the Pennsylvania Railroad. Shrewd engineers and traffic managers have worked out this problem through its natural stages in practice. They have taken into account the engineering problems of construction and maintenance, the quantity and value of freight and passenger traffic, the agricultural, mining, and other productive resources of the region they serve, and the

possibilities of growth in wealth and population. Adjusting themselves to these necessary conditions and limitations, they have gradually organized the traffic business into a plan. Such a railroad type study, transferred bodily from life to the schools and worked out on this basis of actual historical development and present practice, becomes a vital growing process of thought for children, a revelation of great economic and social forces.

Shipbuilding and traffic on the Great Lakes. — The growth of shipbuilding and of water traffic on the Great Lakes has been guided and shaped by prudent, foreseeing business men who took into account the climate and physiography of the Great Lake region, its forests and mines and agriculture, its central position between the productive West and the manufacturing East, and the needs of its growing cities. The Lake traffic has developed under natural conditions taken into account by practical, intelligent business organizers. The schoolmaster can afford to give up his artificial method of dealing with this unit of study in favor of the actually developed business process which sagacious business men have already worked out through a series of problems and have organized into efficiency.

Numerous examples of necessary and natural organization in world affairs. — This is the natural genetic way in which modern occupations and large industries have developed their processes. Mining enterprises, cotton factories, scientific farming and stock raising, large mercantile houses, the skilled trades, and basal manufacturing processes have all developed on this experimental, problem-solving, rational basis in close

adjustment to life necessities. Our political and social institutions have been developing practical projects, showing a similar history of rational growth conditioned by natural and human forces in the world. The newspaper business, the telegraph system, the postal service, state and municipal governments, hotel management, banking business, steamship companies, and political organizations — all these and many more are projects and institutions growing and expanding under intelligent management and subject to the life strain.

World forces operating through these main channels of thought. — If we are ambitious to gain a real understanding of these growing industrial enterprises and of social or political organizations, let us trace the main stages in their progress and evolution, this vigorous struggle for existence and survival which all have been passing through. It is by swinging into this current of progress and evolution that we find the natural process of thought and the real, practical basis for the organization of knowledge. For what is knowledge, deserving of the name, other than a full understanding of the processes and channels of activity through which the world forces are operating? The trades and industries and the social institutions, seen clearly in their development and present activity, are the big, already well-organized object lessons for our schools. Our present course of studies has torn these big topics to pieces and has given us the scraps.

Projects a good substitute for scrappy knowledge. — It may be a simple proposition after all to substitute a few of these significant types of efficient organization in a real world for the endless small facts and common-

place artificialities of our school texts. A few strong, aggressive projects well thought out and demonstrated are far more expressive of progress in thinking and in real knowledge than a host of these pale, disjointed, literal facts. A small group of big dominant units of organized, pragmatic knowledge will more than take the place of this endless array of, inoffensive, meaningless formularies.

Rough encounter with real organization. — Out in the world, organizations of experience have been wrought out under trying and compulsory situations that test their full value and efficiency. If children and teachers can press up close against this vital experience and reproduce its sharp lessons, they can not fail to become stronger thinkers and organizers of thought. Our schools are in desperate need of this rough encounter with real organization. They have remained aloof from the world and have gone to seed in wordy phrases and stale generalities. The school has been conning these phrases and mumbling these dull facts when it should have been engaged in a better business; namely, collecting and organizing experience from important enterprises. Teachers seem to have been traveling along in a narrow enclosed lane with no real outlook upon the fields and forests and mountains and human occupations that lay close at hand along both sides of the road.

How to find real problems. — We talk much about problems and self-activity and resort to all sorts of forced and artificial devices to create problem situations for children. But if we would plunge freely into world affairs, sharp problems would smite us in the face at

every turn. Every farm or dairy is such a problem; every shop or factory is another; and every kitchen repeats the lesson. The failure of the school to function is due to the fact that it runs its course too much apart and does not head up anywhere in life, does not feel the sharp contact with the results of organized experience in a real world.

The best literature for children produced outside of the school. — A second field of knowledge of high importance should be named, in which we are compelled to go outside of the school and entirely beyond its influence to find that pedagogical organization of knowledge that the teacher has been searching for; namely, that peculiar form suitable for children. The choice stories, poems, and dramas which are prized so highly in the schools were produced wholly outside of the schoolroom, in places not frequented by the schoolmaster. Whittier, Hawthorne, Cooper, Scott, Dickens, Shakespeare, Homer, and the rest have furnished the children in the schools with a perennial feast of the good things of the spirit. But none of these choice products ever originated in the brain of a schoolmaster or within the walls of a schoolroom. Irving in producing *Rip Van Winkle* was not preparing a book for children. Bunyan's *Pilgrim's Progress* was a serious effort to produce a religious book for adults. Even *Robinson Crusoe* was first written in a language and style wholly intended for grown people. The fairy tales first collected and worked over by the Grimm brothers were an important literary undertaking by great scholars with perhaps little thought of children. The atmosphere of the school is not conducive to this kind of produc-

tions. The school, where teachers are wise and sympathetic, can make good use of these literary products, but it can not originate them. It is not close enough to life and to nature.

The works of masters originate in life and express life needs. — Great writers have produced their best works under the pressure of strong life influences. They have dealt with themes that appealed to people outside of the schools. Scott wrote his poems and novels for the English public; Dickens, likewise. Shakespeare's plays were not even printed but were prepared with direct reference to the London stage. The works of the masters originate in life. They express world ideas that are struggling for utterance in the hearts and brains of reflective and inspired thinkers and organizers. The writers had no conscious pedagogical hobbies, nor were they thinking of the plans and devices of the schoolmaster. And yet it is the nature and genius of the master to clothe his thought and work out his idea in a style that we schoolmasters, in our latter-day wisdom, call pedagogical. Stories like *Don Quixote*, *Robin Hood*, the *Arabian Nights*, *Moses*, the *Odyssey*, *Ivanhoe*, and the *Moor's Legacy*, and poems like *Lochinvar*, *Horatius at the Bridge*, *Paul Revere's Ride*, and *The Pied Piper of Hamelin* have in them an inborn quality that fits them in a curious and marvelous way for school use, but their origins are remote from the schoolhouse and its atmosphere. No breath of air from the realm of scientific pedagogy was ever wafted across their birthplace.

The stirring books of history are not textbooks. — Again the books of history that have attracted readers

and aroused thinkers were not textbooks prepared for the schools, not even for the higher schools. Parkman, Macaulay, and Fiske have been read with enthusiasm by thousands of readers. But these books are too life-like and pedagogical to be used in schools as texts. They are interesting and highly stimulating; they possess a natural, unstudied pedagogy. In our standard texts we must have something dry and commonplace. The textbooks generally used in high schools and grammar schools have smashed the record for dullness. It is a curious fact that John Fiske in his later years wrote a grammar-school textbook in American history, and it is quite as condensed and dull and depressing as the standard texts. When he changed his plan to conform with the usual method of standard textbooks, he left his pedagogical instincts behind and produced a lifeless book in conformity with the schoolmaster's plans. These things suggest that the standard schoolmaster is strictly immune from pedagogical ideas and enthusiasms.

The best science books are not textbooks. — With the introduction of nature study and science we expected to break away from the traditional routine of dull study and employ a natural and animating method. Nature study forces us more into the open, into the real world, and there we must come in contact with plants and trees and insects and larger animals, growing and active in their natural environment. To work out the life history of an oak tree or butterfly or frog in its natural habitat is a genuine and natural study problem. It shows the struggle for existence, each plant or animal adjusting itself to environment and fighting its way step

by step to maturity. We may easily name a few books which have dropped into this natural plan of treatment. Dr. Jordan has told the story of the salmon, Enos Mills the life history of the thousand year pine, and Burroughs has given us his "Birds and Bees." Kindred to these are Tyndall's excursions among the Alps and Hugh Miller's explorations among the rocks and the journeys of the great naturalists, as Audubon and Darwin. But not any of these are textbooks and somehow every effort to reduce science to a standard school form and outline of lessons lands us in the very same dull formalism so familiar in the older systematized studies.

In recent times natural science has been pushing to the front and now plays a leading rôle in the controlling industries and occupations outside the school. But it has been a serious problem, an unending struggle, to get these scientific ideas, so powerful in life, incorporated into school exercises. Put into school harness, these mettlesome ideas seem to lose their fiery spirit and become plain work horses, dull and plodding.

Science finds its true setting and meaning in life. — Here again we may be compelled to leave the school behind and make some excursions out into life to find out what science is doing and what is the true method of attack in scientific problems, at least in the field of applied science. The story of scientific discovery and invention and the application of these results to commerce and industry and social life would open up some genuine projects and problems. The stirring biographies of Watt and Stephenson at work on the steam engine, of Morse experimenting with the telegraph, of

Pasteur in his laboratory working on bacteria in ferments and applying the results to agriculture and to medicine, of Bessemer devising the converter for reducing the cost of steel production — these are but illustrations of scientific projects developed under the stress and strain of life's urgent needs. They point out those natural evolutions of thought in close relation to human affairs which pedagogy can well appropriate to its own betterment.

Law schools study cases as carried through in the courts. — Law schools, having abandoned their old formal procedure, are now accustomed to study law by cases. Laying their textbooks aside they take up some important typical law case and trace out its progress step by step as it was handled in the briefs of opposing counsel. This is the full natural history of the case as revealed in court practice. This study of actual cases, as worked through the courts, has become in law schools the basis of method in mastering the theory and practice of law. For teaching purposes it is an abandonment of the systematic textbook method, except perhaps as a final means of summarizing results. It teaches by examples drawn from life.

Agricultural instruction has adopted the method of life. — The agricultural schools have adopted a similar plan, that is, of duplicating actual field conditions on the farm; of testing seeds and soils and crops by field cultivation, by working out the life histories of wheat and corn and cotton in the open, with soil and drainage conditions peculiar to different farms. Even the life histories of harmful insects and of useful birds are traced through and fully described as to food, habits,

migrations, and adjustments. The agriculturists have gone over to the method of life and are getting important results. By introducing the school garden with its actual problems into the school, we are putting children in contact with these necessary processes and practical operations of science which furnish the best training for gardeners and farmers.

Industrial and household arts turn to life for problems. — The natural method of life in contrast to the formal method of the school texts finds one of its convincing demonstrations in the treatment of industrial and household arts. The projects now being worked out in the industrial arts are those of the shop and the factory. The units of construction are a table to be built, a book to be stitched and bound, a rug to be woven, the design of a lamp shade or set of bookshelves to be thought out and executed according to the better norms of art and construction prevalent in these crafts. In the household arts likewise a dress is to be designed and made, or a typical dinner is to be prepared and served along the usual lines of effort and skill employed by trained workers in these household matters.

Teachers should break away from formal methods. — All these varied school subjects give unmistakable proofs that the school when left to itself shows a strong tendency to drop back into a formal and unnatural method of teaching, a rigid and isolated routine that sets the school distinctly apart from life. Nothing less than a powerful jolt is necessary to break the rigidity of this formal school system and to set in motion the forces that will reorganize studies on a better plan. It should be the settled policy of teachers to be self-

critical, to break away from the dominance of formal, traditional method, to keep in close contact with specific technical plans and organization so as to appropriate the inherent natural wisdom that has been hammered out in experimental life processes. Direct contact with life problems is refreshing and vitalizing. Jesus was not able to do much in Jerusalem among the schoolmen — the formal, theological teachers. True to type, they were incurable formalists. He had to get away from them, steeped in their formal theologies, and settle among working people at Capernaum and live in the midst of fishermen's huts and boats or among the throngs of country people on the roadsides and hill slopes of Galilee, and then and there religion began to take root.

Teachers should go to school to life processes. — The school and its methods require constant reconstruction from the standpoint of useful, homespun experience. The teacher above other things needs a constant reschooling in the ways of life. He should guard against the conceit of formal method. In short the secret of the schoolmaster's art lies not within the formularies of static method or in dry systematic theories but shows itself active in the growing processes and pushing enterprises that dominate trade, politics, industry, and social life.

A basis for reconstruction in practical thought projects. — We have been looking for a working basis, a ground plan, for the reconstruction of our elementary curriculum. We need the basal types of activity which objectively represent the large world forces in action. As ongoing projects they are the tangible expressions of the influences which are controlling and organizing

our environment. They are surcharged with the best quality of organizing thought. They are not rule of thumb performances but directed, rational activities following progressively the main channels of active enterprise in the world.

Organization of school studies on a life basis has two aspects: first, the natural grouping of knowledge into a single project for immediate classroom purposes in the process of learning; second, the grouping and organization of these large topics connectedly forming a sequence extending through the whole curriculum.

A large scope to the problem of the curriculum. — The argument in favor of this reorganization of studies in the curriculum on a life basis has a still larger scope. The whole problem of the relationship of the growing child to the civilization with which he is environed is brought to the front. How shall boys and girls be educated from early childhood up so that they may come to an effective understanding of this surrounding world and also gradually accommodate themselves to its requirements?

The child's freedom and the world order. — The natural process of learning and of mastering one's environment based on these real projects is in fact also a process of accommodation to this world order. For the child to yield to this established world order and to reproduce its processes, working out its problems by his own thinking, is the right mental attitude for the thinker (whether child or man). This outer world assumes the right to impose its behests and its established order upon the child. This obedience to requirement may be called an act of freedom on the part of

the child because it is the only pathway by which he can gain freedom and control over nature. We are told that there should always be a balanced relation between freedom and authority. Here we find it. The child is to exercise a large amount of freedom or self-direction in a world governed by law. If we are to reorganize beforehand at all, we must lay out the roads over which the children are to travel (the curriculum). This suggests that the curriculum maker has some positive, authoritative commands to give. Where do these commands come from, and how do they relate themselves to the child's own free modes of thought? Evidently the child and the world need to be brought to a mutual understanding and agreement. This touches the heart of our problem and suggests that we may find among the regulated activities of nature and of social life the common ground between freedom and authority where child and world can come together and work in harmony. Child and world come to terms on the basis of freedom of action within the limits set by nature and human institutions. But human institutions themselves should be of that humane, natural order which harmonizes with his activities and interests. The child in turn must make up with this world environment which lays down its own conditions without regard to his mere whims. There is a kind of organized knowledge in the real world which the child is bound to respect, to deal with, and somehow to get the mastery of. He has a thinking, flexible mind with just the resourcefulness necessary to adjust himself to this prearranged system and world order.

Two phases of this problem. — Two important phases of this relationship between child and world demand serious consideration: First, this outside, natural, and human world is the one important theater and the only one upon which education must work out its results. From start to finish this external, objective world in its varied aspects is the central object of attention and of purposeful study. It is the thing to be understood, mastered, and utilized. It includes nature and man and their mutual reactions, producing what we call civilization. This central fact kept clearly in mind will teach us to judge wisely the value or defect of all our schemes looking toward the main purpose. While this fact may be called a truism, it is one of those truisms which is once named and then, in the press of business, generally forgotten. Second, the child from the start has deep-lying and strong bonds of kinship and vital connection with this outer world. The "call of the world" in ringing tones is heard by every child. He must be about his father's business and that is first of all to get acquainted with this wonderful home, this actual, enterprising, doing world. As Whittier said, the world is

"A complex Chinese toy
Fashioned for a barefoot boy."

A powerful natural drift carries a child into this outer cosmos, just as hearty boys living near the seashore are drawn toward a seafaring life. This powerful appeal is felt more and more by children as they advance year by year toward youth and maturity. Their games and small projects worked out in imitation of the occupations and sports of their elders are further proofs of this

natural trend and aspiration to mix up in the affairs of the larger world.

The schoolmaster diverts the children away from the world. — One of the main difficulties in making progress in education is that the schoolmaster often seems determined to head off this powerful instinct to mix in world affairs, and he sometimes diverts the children into a blind alley where they are drilled in walking up and down to get some sort of discipline.

But the disposition to be doing something in a real world, to be working out projects, to be engaged in active enterprises that have important results, is a spiritual tie that binds the child to the world in friendly kinship of feeling and purpose. In laying out a plan of education we may well search out the natural highways of thought and experience by which children make their entry into this world environment and in course of training adjust themselves to its interesting and compelling requirements.

The shaping influence of life processes on the school course. — The discussion so far is merely an introduction to a definite scheme for setting up a series of genuine life projects extracted from the outer world and still dripping with its elements, and then for placing these telling realities on the school program as the main content in education.

This may be called a radical reconstruction of the school program under the shaping influence of life processes. Stated in other words it is an effort to shift the center of gravity in teaching away from the bookish, droning summaries of the schools and place it directly in the midst of the most active and thriving centers of

life. We would see the school take on the spirit, the method, and the organization of the active, problem-solving workers in a busy world. We want the children to forget for the time being that they are in a school — so absorbed are they in these pragmatic or life problems. This would create in the schools a life corresponding to the typical and the best that is going on in the external world, part and parcel of its make-up and spirit. Our plan is to reorganize the curriculum on the basis of *typical life projects*.

Two strong features of the typical life projects. — For many years teachers and philosophers alike have been exercising their wits on this problem, "How may children approach and master this complex world environment? What are the means and methods of getting at this world-machinery, of putting it under sensible control so as to turn it to the best uses?" This thing which we call the typical life project is assumed to be a noteworthy center of organization which has two well-marked features: First, it is an example of the natural genetic development of experience and knowledge on a life basis, that is, in strict correspondence to the scheme of practical daily affairs. Second, it suits the child's venturesome and constructive instincts in his efforts to explore the world and to push his own way into the main avenues of experience.

It is fortunate that the boy's or girl's interests and active impulses are so easily aroused by the suggestion of these enterprising projects because they lead directly into those fields of action where the best results have been achieved and where future adult interests are sure to lie.

What are these typical projects from which we anticipate so much?

Broad scope and variety of typical life projects. — Some of these life projects center in important enterprises in the past and may be classed as historical although they may expand and overlap into other studies. Others are chiefly geographic or scientific, and still others spring naturally from the industrial and household arts. Being broad in scope and practical rather than scholastic, such a project or type study reaches freely and broadly into various fields of knowledge, gathers its materials from many sources, and groups them around a practical life center.

Large historic projects. — History, for example, exhibits such large types as the Virginia Plantation in the seventeenth century, Boone's laying out of the Wilderness Road leading to the settlement of Kentucky, the purchase and exploration of the Louisiana Territory, Burgoyne's invasion for the purpose of cutting off the New England Colonies, Hamilton's project for funding the national debt, the survey and construction of the first Pacific railway, the framing of the Federal Constitution in 1787, putting the first steamboat on the Western rivers, the making of the Missouri Compromise, Samuel Adams' organizing of the Committees of Correspondence, plan and building of the Panama Canal.

It is around such centers of human enterprise that the facts and forces of history have organized themselves in their own peculiar way, thus developing sometimes into historic achievements, into large industrial establishments, or into social and political institutions,

such as manufacturing and mining companies, business establishments, and city or state governments.

The Virginia Plantation — a typical historic unit. — The Virginia Plantation, for example, was developed in the early history of the colony as a suitable scheme for distributing the land in large estates among a wealthy and aristocratic group. Such a land system gave to this group a dominant industrial, social, and political control in the colony. All other interests, such as slavery, agriculture, legislation, commerce, and education were subordinate to this control. This system became well established in Virginia first and spread later in its essential features into the Cotton Belt and over the rice and sugar plantations of the South. It gradually consolidated into a political and social caste system which shaped the history of the South and in large part that of the whole nation down to 1860 — two hundred years. The Virginia Plantation as a topic fully demonstrated in its actual historical basis and development is what we mean by a typical life project. It may be added that this project has been several times tried out with success in grammar-school grades.

Geographic projects. — In geography we may name a corresponding partial list of typical life projects, for example, the exploiting of a North Dakota wheat farm (the Dalrymple farm), the Mussel Shoals power plant as a Government or company project, the Salt River irrigation project in Arizona, the river and harbor improvement at Glasgow, the reconstruction of Vienna and Paris as municipal projects, the equipment and journey of a caravan across the Sahara Desert, the management of a sanitary dairy in Northern Illinois.

The North Dakota wheat farm. — The Dalrymple wheat farm in North Dakota was an agricultural project for buying up seventy-five thousand acres of drowned swamp lands in the Red River Valley, and by the use of modern machinery in drainage and ditching, in sod breaking, in seed sowing, cultivating, and harvesting and by marketing on a big scale to achieve a large success. This project involved a variety of difficult problems requiring practical intelligence, ability to forecast results, and persistent energy. Among these problems were climatic and seasonal vicissitudes, the selection and testing of suitable seed, the fighting of insect pests, the struggle with the railroad companies for cheap elevators and shipping privileges, and the study of world markets. There was also an expensive outlay for machinery and the problem of supplying laborers at critical intervals. As a description of typical conditions it naturally expands into an interpretation of the whole northwest wheat belt with Minneapolis as its central outlet. Later this northern spring wheat belt comes into comparison with the winter wheat belt further south in Missouri, southern Illinois, Kansas, etc., and with the wheat-producing regions of Oregon and the West with Portland and Seattle as trade outlets. It thus expands into a national topic.

Again this topic as a project in wheat production has been worked out in the classroom with reasonable success.

Nature study and applied science. — A third series of typical life projects may be named in connection with nature study and applied science, as:

How to plan and manage a home garden

The housing and care of a hive of bees

A health campaign against typhoid, malaria, etc.

Watt's discovery and later improvements of the steam engine

How the frog grows and adapts himself to environment

Projects for the sanitary improvement of the home

The construction and use of a lift pump

A project for making and stocking an aquarium

The causes and movements of a cyclonic storm

How the first telegraph was worked out

The city problem of securing a pure milk supply

How the coal beds were formed

The present antituberculosis campaign

The organization and management of a city hospital

How to get rid of the house fly

The laying out and care of a flower garden

The home garden as a project. — The home garden, as an example, consists of a whole series of projects of interest to children — in caring for plants, in dealing with soil and weather conditions, in protective sprays and other devices against insect and animal pests, and in the use and care of tools. Other problems deal with the selection of seeds, the preservation of vegetables after harvesting, and also with marketing and household preparation and cooking of vegetables and fruits. The school garden furnishes the best possible series of connected home problems, requiring wise planning and forethought and careful later execution which will continue through the season.

The cyclonic storm. — Again, the cyclonic storm is one of nature's own projects, worked out on a typical plan and on a grand scale for combining the weather-producing forces into a system explainable on the basis

of scientific knowledge. The complete mastery of this typical process by experts has enabled them to forecast important weather conditions several days in advance to the very great advantage of farmers and fruit growers and to transportation lines on land and sea, and even to estimate the stages of high water on rivers which may threaten cities and many low-lying areas of cultivation.

We have few better examples of the bearing of scientific knowledge on human welfare.

Industrial and household arts' projects. — The working out of typical minor projects on a simple basis suitable to school children is better exemplified in the industrial and household arts than in the studies we have been describing. The following examples may be cited: The preparation of a simple breakfast; the designing and making of a dress; the plan and construction of a bird house; designing and executing a table in shop work; a well-thought-out and developed project of a chicken house or corncrib or garage or hotbed; a plan for decorating a room; the design and work on a book binding; making the pattern and weaving a rug; the construction of a cedar chest; the suitable framing and mounting of a picture; planning and putting together a coasting sled.

These minor home problems correspond well to similar larger projects which adults are all the while working out in life, as the planning and building of houses; the construction of bridges; the inventing of machines, like engines and motors; the building of boats; erecting barns, silos, and windmills; planning telegraph and telephone projects; mining and reduction enterprises; engineering projects in road construc-

tion and harbor improvements; schemes for draining swamp land, for forest conservation, for shipbuilding and canal construction. Again it would be impossible to draw any clear line of demarcation between the early small home projects of children and the larger later projects peculiar to adult life. The imitative impulse toward adult projects begins early and develops progressively.

Units and masterpieces of literature. — In all these prominent thought studies, history, science, geography, industrial and household arts, the smaller or larger project, as a type of human effort, is the center for the organization of experience. But one other great thought study remains, literature, and it is focused upon the chief units of literary art, corresponding closely to the large projects in other studies. In fact literature is a still better illustration of the more perfect organization of knowledge materials combining beauty of form with copious richness of thought. The themes also of the masters spring directly from life and reflect its deeper meanings.

Language is so deeply inwrought with all the important thought studies that it is dangerous to separate it from such excellent company. Whenever we make language an exclusive study of rules and principles and formal grammar, our vital grip on language as a means of expression seems to be relaxed and weakened.

These life projects are the natural approaches to world knowledge. — We have been saying all along that the projects are centers of organization for grouping and combining materials so as to form a simplified and unified course of study. We are now disposed to

conclude that these pragmatic organizations, springing out of the developing experiences of men and women in the life struggle, also mark out clearly the natural approaches to knowledge for the inquiring minds of children and youth. They express the original genetic growth and combinations of experience which spring the lock and reveal the inner structure of this world machinery surrounding the child. A study of particular projects is necessary to make this point clear.

The problem of reorganization thrust upon us is thus clearly defined and the solution of this problem is to be found, we think, in reorganizing the study materials around these natural thought centers. Inseparably bound up with such a plan of organization is the question of method of instruction, grounded in the natural evolution of thought in the growing minds of children.

But few important thought centers in studies. — How much substantial relief from the present complexity and confusion of studies is this reorganization calculated to bring? The more thoroughly we inquire into the basal values and content of elementary studies, the more our attention is forced up against the fact that the predominating thought centers in any study and in the larger combination of all studies are few in number — surprisingly few. The present miscellaneousness and superficiality of numerous studies would wholly conceal this underlying simplicity. Now if these few centers are not in themselves too complicated, if they are readily accessible to children, a radical simplification of our curriculum may be plainly in view.

The few strategic centers suggest a basal simplicity. — Wherever this effort to simplify the course has been

attempted by grouping facts and data around a central core, as in the case of the Erie Canal and the Virginia Plantation, a surprising relief from the bewildering complexity of studies has been the result. The interesting and adventurous story of La Salle, suitable for the fifth grade, brings to one center an amount of history and geography well knit together that is amazing and even includes elements of physiography and natural history. By a natural expansion it may serve as a type of French exploration and French influence in America. These few strategic centers around which extensive knowledge can be arrayed in such a way as to demonstrate the vital truths which form the backbone of important studies give us strong hope of a greatly reduced and simplified course of study. A big, apparently complex topic, like the Union Pacific Railway, may be very simple and transparent in its basal, concretely expressed idea and thus radiate a clear light over all its immediate attachments, besides serving later to interpret other railroad routes across the Western mountains.

The growing complexity necessary in large topics is a movement toward simplicity and comprehensiveness. — The growing complexity involved in the natural expansion of these long topics need not confuse the children because it carries forward the natural grouping of the facts in their proper relation of cause and effect. They are far better understood and remembered in these essential relations than as separate disjointed facts. If children are to do any thinking at all, they must discover and trace out the relations that bind the parts of knowledge together into larger, complex wholes. Growth in knowledge, if it is to be

anything more than a haphazard and tiresome accumulation and reiteration of facts, must be a discovery of relations and meanings that knit together the parts of knowledge into larger bundles. As developed wholes these larger groupings are transparently simple. And yet they may be very far-reaching as a basis for the future constructive development of knowledge, *i.e.* on the basis of types. If this simplicity and far-reaching connectedness in knowledge subjects can be demonstrated, our case is proved. Otherwise we are thrown back into the chaos of miscellaneous, factual studies.

These centers are practical groupings, not logical classifications. — It should be clearly understood that these larger groupings or life organizations of knowledge are not identical with the commonly accepted logical and scientific classifications, which have long been so familiar to us in school studies. In total contrast to such artificial and bookish predicates they may be described by that much abused word “practical.” They represent projects generated and brought to fruition under life pressure and bearing the stamp and full impress of the outside world. They exhibit everyday forces at constructive activity in their working clothes and in their necessary relations and environments. We do not object to scientific classifications in their proper places and useful functions. But in the processes of teaching they come late into service and should be held in reserve as ultimate norms for fully organized knowledge.

Is democratic education in this deeper sense feasible? — The complex environment of the modern world is presumably made up out of these large operative units

which have been combined into a social, coöperative scheme which we call civilization. It is quite apparent that this complex social and economic machinery is a mystery to many adult people. Their education has not given them sufficient clues to unravel its mystery. The deeper question is: "How far is it possible to educate the common run of children so that they will understand in a primary fashion the leading forces and agencies operating in our society?" Those who object to this question as too deep should remember that we are a democracy and that the problem of settling and ordering their own affairs is up to the people.

Our present instruction not equal to this problem. — In our democratic society it is quite important that the people should gain insight into the fundamentals of this social system. Our present plan of elementary instruction is not doing much to clear up the confusion. The school system is performing an enormous service in many important ways, but this problem of mastering the elements of our economic and social life in its present form is new and the product of recent, rapid developments in our national life. Our present school instruction does little more than familiarize the children with the names of the leading elements which compose this complex situation. To expect children to pass over from this alphabet of names to an interpretation of complex life agencies is wholly beside the mark, as if one might be supposed to understand chemistry who had merely learned the names of the primary chemical elements. The larger, simpler units which comprise this complex social status must be grappled with in their individuality and their relationships.

Typical cases must be studied concretely. — Our scheme, therefore, for gaining a real understanding of this seemingly intricate world system is that children should become acquainted gradually and in succession with its larger component factors, objectively demonstrated as types of fundamental processes and working institutions in society. For the benefit of children we must get at these typical life projects concretely in their most simple and effective mode of treatment. They have developed and grown into their present form under the shaping influence of economic environment. We can get at their history, their crude, simple beginnings and the main steps manifested in their growth. This whole growth and the present result can be presented and seen objectively as a life process, actually operative, not as a definition or theory abstracted from life.

Large simple types reveal the world structure. — In fact the world is not nearly so inscrutable as it first appears to the unpracticed eye. It has some big simplicities in its structure which can be clearly opened up to the discerning eyes of children. It is our full confidence in children and youth, that they are qualified to think these problems through when objectively presented, that implies hope. To disentangle this seeming complexity children require big, simple object lessons in nature and society which, as genuine types of main processes and institutions, unravel the mysteries.

Example of our postal system. — Among social phenomena our present postal system is a vast and complicated piece of machinery. Yet it is simple in

its basal elements, and the growth from early primitive methods can be clearly traced and demonstrated illustratively to children and even thought out as a natural succession of problems. In fact the difficulties and problems met in such developing projects supply children with the best stimuli to thought and reflection that we have yet discovered.

The objectivity of big topics and the large brain capacity of children need to be considered. — In this effort to understand the world two things we have strangely overlooked or at least completely underestimated: One is the conspicuously objective quality of these big topics as presented to view in world life outside of school, as seen in steam engines, skyscrapers, railroads, public buildings, steamships, city harbors, universities, cotton fields, and factories; the second is the inborn capacity of children to think with their big brains far in excess of their bodily growth. Instead of these conspicuous object lessons offered directly to children for thoughtful interpretation, we have been stuffing their minds with a mess of definitions and general statements and dry isolated facts that are a drag upon mental action and a drug in the school market. Nobody denies this who is conversant with the facts, and yet somehow we are unable to shake ourselves free from this traditional incubus. Why not give children plenty of strong, rich thought material in lifelike demonstration and not be always censuring them for failing to respond to the dull and uninspiring material we have been offering?

The broad gateway of knowledge can be entered by all who think. — As children move into the larger

realms of knowledge through these broad gateways offered by tangible demonstration types, like ships passing out through the Golden Gate into the Pacific, their onward movement into the world of knowledge is not impeded but strengthened and reënforced. Children can not move out intelligently into this complex world, demanding thoughtful interpretation, on the basis of a stupid memory routine. Their minds must expand to the comprehension of still broader relations as the world opens up. The world in all its essential aspects is dominated by thought, and this thought must grow in graduated complexity as we advance. This expansive energy of proper thinking is clearly shown in the matters now to be considered.

Several studies are grouped together in any large typical project. — One of these growing knowledge centers, by virtue of its scope and integrating power, gathers into one transparent unity of thought important materials contributed by three or four studies. For example, the story of the Pennsylvania Railroad in its early history and growth, conditioned by geographic environment and influenced by progressive scientific invention, combines several studies into one large developing project. It draws strongly upon history, geography, science, mathematics, and language. For the time being all these studies combine into a coöperative group for supplying the knowledge materials essential to a full understanding of this growing traffic system. The Panama Canal is also the outcome of such a combination of many strong influences acting in a world environment to achieve the solution of a great commercial problem.

The simplicity of such large teaching units. — Few important projects, if any, can be worked out on the extremely limited resources furnished by any single study. Sometimes the whole range of studies supplies none too broad a basis from which to work out the adequate treatment of a single big teaching unit. For illustration, the home garden, as a project, is almost as broad and as varied in its scope as the course of study at any one point, and it is not unduly complex or difficult for children. These extensive correlations peculiar to large teaching units appear, at the first glance, to complicate our instruction; but as a matter of fact, they simplify. They reveal the scope and meaning of some big governing idea which, like a view from the mountain top, at one glance brings into simple perspective and arrangement a whole vast grouping of minor facts.

A typical project grows into a series and interprets a whole line of kindred topics. — This organization of manifold information from several studies into a comprehensive but simple unit is after all but the beginning or first step in a continuous growth of knowledge along one great highway of thought. In this progress the interpretative power of the original basal idea shoots its light forward through a whole series of later studies. For example, the idea of evolution seen clearly demonstrated in one long animal series becomes a keen and quick principle of interpretation of numerous animal and plant series and finds application in many other fields of knowledge. The Mississippi Valley is a very large topic of almost continental scope and complexity, and yet it is objectively simple and tangible in its main

features. By first gathering a full and well-organized knowledge of the Mississippi as a geographic unit and type, we may carry forward a succession of profitable river studies, first, of North America and, later, of other continents, which will give a steady growth and expansion in a simple line of thought with the Mississippi idea as the basal unit and standard of comparison. As the idea grows, it becomes more simple, powerful, and far-reaching. The broader, more far-reaching (complex) it becomes, the simpler and stronger its meaning. A big demonstration topic like the Mississippi River is designed therefore to set on foot an extended thought movement which steadily organizes its materials around the original axis of thought, the main idea.

The continuous growth of a large teaching unit contributes to greater simplicity and enrichment. — Such a continuous growth and concentration of knowledge upon a central theme produces two remarkable results: first, a constantly renewed demonstration and clarification of the original central idea (simplification); second, a steady expansion and enlargement of thought to include all important variations (enrichment). It is in such large, fully elaborated topics that we achieve a fundamental simplicity combined with scholarly enrichment in subject matter.

This continuous development of fundamental types through the full length of the course of study gives such an emphasis to central organizing ideas and such a proper evaluation and use of the secondary facts gathered around these central axes of thought that simplicity and clear thinking characterize every advance into these seemingly complicated subjects.

SUMMARY

A few main highways of thought extend through the full length of important studies and form the bases of organization.

The chief projects as centers of organization are distributed along these trunk lines of thought.

The world outside of the school has organized its resources and its activities into large typical projects. These projects express man's principal achievements in their aggressive, organizing character.

The discovery is now made that these practical life organizations are a better basis for teaching than anything the schools have devised. They exactly fit the needs of children in their efforts to gain the mastery of the world about them in society and in nature.

The school may wisely appropriate these already organized projects as the best means of introducing children to the actual world arrangements.

The wide-awake, intelligent interest of children in these big objective projects and their whole-hearted participation in them are clear proofs that the child and the world can get together on this platform.

Every important project at its beginning plants its roots deep in a life situation and it ends in a direct reaction upon life and an interpretation of life problems with a deeper and broader meaning.

It has been found that intensive organization of knowledge at the strategic points along these main lines of thought leads to a remarkable simplification and enrichment of the curriculum.

As complete objective demonstrations of fundamental processes in the world, these projects are universal types and serve as interpreters of world affairs on a grand and simple scale.

By learning gradually to understand the world order as revealed in these fundamental, practical organizations, children are on the highway to that specific knowledge of the social machinery that leads to intelligent citizenship.

QUESTIONS FOR STUDY

1. Give the simple basis for the organization of studies.
2. Explain the term "life principle" as manifested in great studies.
3. Show the inadequacy of *elimination* as a means of determining the curriculum.

4. Describe the effect of the *quantitative idea* upon education.
5. How are the faults of the curriculum to be corrected?
6. Explain the meaning of this statement, "The school is growing into a worldlikeness."
7. Show the relation of "big business" to the school curriculum.
8. Where shall we find a pedagogical organization of knowledge? Why?
9. Give reasons why the schoolmaster has failed to organize studies properly.
10. What do the masterpieces of literature prove? Illustrate.
11. Show the weakness of the formal methods of the schools.
12. How may the child and the world get into harmonious relations?
13. Is it advisable to treat historical subjects as projects? Illustrate.
14. What are the studies to which the project idea is particularly applicable? Give special reasons.
15. How can the growing complexity of big topics lead to simplicity?
16. In what two principal directions does the large project organize knowledge?
17. Compare the schoolmaster's way of organizing knowledge with the way of the practical world.
18. To what extent does the proposed plan of organization seem to rest on a sound educational basis?

CHAPTER III

SIGNIFICANCE OF IDEAS AND THEIR RELATION TO THE THINKING POWER OF CHILDREN

In the foregoing chapters unusual stress has been laid upon large teaching units. They are set up as object lessons in organization on a comprehensive plan reaching lengthwise and crosswise among studies. These expanded typical projects, or units of study, are presented as a ground plan for securing a much needed simplification and enrichment of the curriculum.

The idea like a rich vein of ore. — What surpassing excellence is wrapped up in one of these large teaching projects that can justify this high opinion of its merits? It is the potency of an idea; the whole extensive demonstration is centered upon an idea, and the sole purpose is to exhibit this idea in its working power. When we break through the husk and strip off the wrappings of one of these big topics, we shall find at the center the long-sought treasure — a simple idea. It is a veritable gold mine and, like any rich vein of ore which runs deep into the mountain, it grows richer with depth and is worth all the expense of exploiting. In this deepening study of an idea, entrenched in the facts and surroundings of life, we discover both the meaning of the idea and its effective power. In the Panama Canal project it is the idea of shortening sea routes, of bringing

hitherto widely separated countries into much closer commercial contact. It is a world-embracing and a world-unifying idea.

We sometimes speak of the facts and materials of knowledge gathered and organized around a central idea. Facts are indeed the body, but ideas are the soul of instruction. Ideas are not tangible and objective, and consequently some thoughtless people are skeptical of their value. Ideas are mental products, and nothing less than mind can comprehend them. Yet they are somehow the sum and substance of knowledge.

Getting the idea. — Ideas are the luminaries that penetrate into all the dark corners of the earth and convert its seeming chaos into rational order. Strange indeed that teachers have to be told that ideas rather than facts are important, for in every study the idea is the meaning that lies at the center of any grouping of facts and without this our labor is vain. Teachers therefore should emphasize ideas because they are the rational, significant elements in study. This is expressed in common language, when, after puzzling a while over a new machine like a milk separator, finally with a flash of intelligence we exclaim, "Oh, yes! I get the idea." Then the whole grouping of facts, no matter how extensive, becomes simple and rational. This is true in demonstrating a proposition in geometry or in explaining a principle of government. It is true when we at length catch the meaning of the central theme in a piece of literature like *Thanatopsis*. When Harvey discovered the circulation of the blood he routed out and captured a long hidden idea, and very soon he was able to interpret a multitude of physiological facts, which,

up to that date, were well known but not understood. Before this, the key idea that showed the relation of digestion, circulation, and respiration had been lacking.

Discovering the secrets of the world order. — Ideas are the eyes of the mind, the far-reaching interpreters of the mysteries found everywhere in the fruitful fields of knowledge. Thus the idea of air pressure on water in the well explains the action of the lift pump. Ideas are the secrets of the world order brought to light and revealed in their broad scope to the surprised intelligence of children, as the metamorphosis of a butterfly through the stages of egg, larva, chrysalid, and full-fledged insect. Ideas are like the sun; once seen, they shine with their own brilliant light. An attempt to give a logical proof of the importance of a great idea is superfluous. We do not light a torch with which to examine the sun. Ideas at work are their own vindication.

There are no substitutes for ideas. — Important ideas exercise an absolute monopoly over intellectual operations, because there is no substitute for them. Everything else is blind and ignorant by comparison. When, therefore, we substitute facts for ideas, we abandon the field of education. Ideas are in a class by themselves; they are unique and incomparable. They alone shed the light of intelligence abroad throughout the world. Here again the whole proof lies in examples, not in argument.

The ancient Greeks were a small people, a mere handful, in a tiny land. But the Greeks had ideas, and with these ideas they stocked Europe and America. All the Western nations as they have risen to intelligence

and culture have looked up to these marvelous Greeks and have continued to pay them the highest tribute. A man with an idea is unusual, even remarkable. The difference between Edison and other people is that he is a man of ideas. He thinks, not along many lines perhaps, but he really thinks; and when a man of that type thinks, the whole world is illumined. Man goes out to conquer the world by the strength of ideas. They are the gleaming suns that reveal the world system to him as he goes out on his thinking excursions.

Figures of speech necessary to express ideas. — Ideas not being tangible and quantitative must find some mode of revealing themselves to our concrete intelligence. So we use figures of speech as suggestive and interpretative. But even our most graphic figures of speech are crude instruments in expressing the full meaning of ideas. We say, for example, that thought travels with the speed of lightning, but the lightning's speed has been measured; not so the speed of thought.

The burden bearers of the world. — Ideas are the gigantic burden bearers of the modern world. The steam engine is an idea encased in steel, and it does heavy work. Hercules was a pigmy compared with the steam engine working in its myriad forms, hauling the vast tonnage of commerce across land and sea, and running vast factories and mines.

A few giant ideas, like fabled Atlas, are quite husky enough to carry the world on their shoulders. What we call civilization rests on a few broad-shouldered ideas which unhappily are not working together very harmoniously and effectively for lack of thinkers and

teachers and still more for lack of an educated people who can respond intelligently to such ideas.

Ideas, therefore, incorporated in large teaching units, are the intelligence centers in the course of study because they are the intelligence centers of the world itself.

The treasure house of the mind. — These central strongholds of knowledge once captured and held by the learner as a seeker after truth furnish a generous equipment for the needs of life. In this sense the whole body of cultural and serviceable ideas is sometimes spoken of as the treasury of the mind, the grand gift of thought that comes down to us as an inheritance out of the past.

The productive energy in ideas. — If now we add to this the further notion that an important idea has wrapped up in it a vital energy, a really creative, dynamic power that keeps it growing and expanding, we discover in such an idea an organizer of knowledge on a grand constructive plan. Such ideas necessarily open up the main highways of thought which go on developing far beyond our present ken. There is in fact a far-reaching productive energy in fundamental ideas by reason of which they generate powerful and lasting influences. It is easy to name a few such basal ideas which have displayed this potential force in human affairs; for example, the idea of justice or fair dealing, of self-government under law, of community sanitation, of expert professional service, of love of home, of patriotism, of protection of life and property. Once incorporated into human experience, these ideas show themselves so useful that they constantly expand and take on new strength. It is interesting to notice that

the mere enumeration of these ideas in this formal manner is a dull recital. The live facts of experience must get into close association with these ideas to acquire meaning and force. Facts and ideas, properly combined, form the basis of knowledge; facts alone are helpless.

The downhill road to oblivion. — Too many facts bunched together in an unorganized mass confuse the mind and are poorer than junk. The mind of a child should not be made a storage ground for lifeless facts. It has been often and seriously affirmed that three fourths of what a child learns of such dull facts in school he forgets. In that case his mind becomes a sort of burial place for worn-out facts; not a very cheerful thought to the educator. This notion of forgetting might serve for old, tired-out folk whose memories are fading out, but children are full of the energy of life and what they get should be nourishing that it may be used for assimilation and growth. What a queer and monstrous thought this is that much the greater part of what they learn so laboriously is dedicated to oblivion, is predestined to failure. This may be called the final slump in education. Informing, regenerating ideas are the sole relief, the one antidote for this stultifying dullness.

Testing the germinating quality of ideas. — Too often this lack of growing ideas with their deep, strong content renders our school instruction sterile. Too many topics are feeble and forceless for lack of this propagating thought quality. As teachers we might take a lesson from recent agriculture. By careful selection expert farmers use only such seed as is sure to sprout and grow. All other less fertile seed is put aside

and fed to the pigs. What would happen should teachers select only those ideas which under normal culture are sure to grow and produce a harvest? The corn testers to-day are scientifically careful in testing the germinating energy of their seed corn. We need idea testers to go through our course of study to test out the germinating quality of ideas and to exclude the weak and trivial. Sterility of thought in school studies is baneful. It devitalizes a child's naturally robust energies. If the concepts that lie at the basis of our course of study have lost their vital force, what is left? "If the salt hath lost its savor, wherewith shall it be salted?"

Peter Cooper's idea. — As constructive ideas may be designated those simple, powerful concepts in the present course which are fertile and generative, yielding not merely a hundredfold but a thousandfold. A certain Frenchman has called these "mother ideas." A single vitalizing idea that has taken deep root in a child's mind may carry him forward on an endless progress and may organize into tributary service the opportunities and forces of a lifetime. Peter Cooper, a poor, ignorant apprentice to a wagonmaker in New York, determined in his own mind, when about eighteen years old, that he would one day found a night school, where well-meaning, industrious boys should have a better chance to help themselves to an education than he had had. He held fast to this early idea through a long life and slowly collected the means of carrying it into effect. Forty-five years later, when past sixty, with his accumulated \$600,000.00 he founded the Cooper Union in the busy part of lower New York

City. After the main building was completed and opened to young men and women, he continued to support it for twenty-five years. It developed into a great school helping thousands of boys and girls of the working class, and it will go on year by year helping other thousands for centuries to come. Thus on the basis of one cherished idea he wrought out a grand course of public beneficence which few philanthropists have ever equaled.

Leading thoughts are the strategists in education. — The eight-year program of the elementary school can not be better conceived of than as the broad field of action where the simple basal ideas in the school studies shall have free scope to develop their steady organizing energy. The course of study, throughout its length and breadth, should feel the driving power of a few constructive ideals. They have a propagating and combining quality by which they gather under their ample protection whole broods and families of mere facts and of related ideas and of kindred, supporting knowledge. Herein lies the secret of the continuous educative process. We must swing into the line of march with children under the leadership of these energetic, far-seeing strategists, the masterful ideas. We shall then glimpse the end from the beginning and get on the main highways of thought.

The smothering of ideas. — How does it happen that many ideas, even the keenest, when brought into school become sterile and impotent? One reason is that they are encumbered with quantities of merely factual knowledge. Another explanation is that they are suffocated by numbers. Ideas, like plants, must

have plenty of room in which to grow. When too many are huddled together in close quarters, they dwindle and die. Somehow we must make room in the school course for a superior monopolistic group, a company of ideas of high rank and prestige. A few stalwart ideas are worth a million pigmies. Because of a natural influx of new studies, our curriculum has become overloaded, even densely crowded with rather cheap commonplace knowledge until it is made up of a multitude of stunted ideas and, even worse, of lifeless facts that never had in them the gleam of an idea. Children can not thrive intellectually or morally on such a diet.

Keeping in good company and living in kings' gardens.

— Our course of study by common consent should be made up of the best in literature and history and science, out of that which is conspicuously important and representative, not out of what is commonplace and ordinary. We use the biographies of Franklin and Webster and Hamilton and Lincoln, not those of any Tom, Dick, and Harry. In this way children who have properly begun their education have spent their early years among *the great*, with the charming story-tellers like Scott and Dickens and Defoe and Homer, with poets and statesmen and heroes and artists and even with philosophers like Socrates and Franklin. The children have been in good company and have acquired a habit of thinking great and noble thoughts. They have traveled with the world's boldest explorers like Columbus and Magellan and La Salle. They were very intimate companions of Daniel Boone and Frémont and David Livingstone and Robert Bruce. They have

been in close personal touch with famous inventors like Morse and Stephenson, Robert Fulton and Edison. They have kept excellent company. Children should spend their time in kings' gardens, not in slums and back alleys.

The birthright of children. — The common school, therefore, properly conceived, is not dealing with common things but rather with uncommon — the best. More than that, the elementary school deals with the large things and not with the little — with the colossal rather than the microscopic. These young minds leap forward to grasp whatever is broad and liberal in thought and conception. To lay hold of and enjoy what is noble and large-minded is their birthright and is within the easy, natural compass of their minds. I have seen a little girl of five years who had not been in school listen with pleasure and appreciation to the reading of Plato's *Apology of Socrates*. It might be well for us to have a larger respect for the mental powers of children, at least for their high spirit and enterprise. At any rate the grand and simple ideas of our Christian society and culture are already embodied in our elementary curriculum and are only awaiting the time when the accumulated rubbish shall be cleared away and these strong wholesome ideas shall have room to grow and reveal themselves progressively in their full meaning and value. But there is no way of serving both God and Mammon; we can not devote ourselves to multitudinous trifles and have time left to cultivate the worship of great and simple ideas.

Our problem remains — how to deal with a few important constructive ideas.

Webster and his one idea. — The great man of any age is the one who can single out the vital idea of the time and carry it forward to a successful issue. Much can be affirmed in favor of the man of one idea. Daniel Webster was a statesman of capacious and powerful intellect, and no one would call him narrow in his interests. But he is conspicuous in our history as the representative of one strong constructive principle — the union of the states in opposition to disunion. His one statesmanlike project was to build up and strengthen against all assaults this principle of Federal sovereignty. His greatest orations, ranking among the foremost of ancient and modern times, center at this one point. The high school or college student who is looking for a central constructive theme in historical study will find it in the life and political orations of Daniel Webster. And yet extraordinary as Webster was in his comprehensive grasp and luminous interpretation of this great national idea, he is but one in a remarkable succession of statesmen — Hamilton, Webster, Lincoln — whose chief merit and distinction was their whole-hearted devotion to this same illustrious idea. There is nothing strange about this, because one such pregnant idea has sufficient virtue and strength to outfit a dozen statesmen of the highest rank. For this idea has now become the corner stone of our Constitution and of our whole political fabric — destined perhaps to stand firm for a thousand years as the supreme type of the idea of free government for the world. Such an epoch-making idea grows stronger with the lapse of years. It was said of Moses at the end of one hundred and twenty years of life that his eye was not dim and

his strength was not abated. But such a regnant idea as this after a thousand years shows no signs of age and seems destined to an immortal youth.

Darwin's devotion to an idea. — Darwin's name and fame center in an idea expressed by a single word. During a long life of investigation and reflective study, he followed the beckoning of a single thought. Into this current of thought he drew one by one the best scientific minds of his time, Lyell, Wallace, Gray, Huxley, and Hooker, not to speak of thousands of less note. *On the Origin of Species*, devoted to the exposition of this idea, has been reckoned the greatest book of the nineteenth century. It is the embodiment of a productive idea whose discovery, scope, and applications summed up the life labors of a profound and original scientific thinker. As a fundamental interpretation of life phenomena and changes throughout the ages, Darwin's conception is revolutionary and transcendently significant. It has exerted a powerful reconstructive influence in all fields of human experience and knowledge.

Great leaders are exponents of single ideas. — These and other kindred examples that easily suggest themselves demonstrate the powerful sway of ideas over adult scholarly thinkers — even the greatest. It may be said with much show of reason that the men of large caliber in history centered their life labors with resolute purpose upon a single potent idea in each case. So it was with Paul, with Luther, with Francis Bacon, with Alexander Hamilton. We often designate a man and his greatness by a single word, as Abraham, the man of faith, Plato, the idealist, Darwin, the evolu-

tionist. It is the ill fortune of the schoolmaster that he disperses his thoughts and efforts too widely; or perhaps better stated, he fails to find and put into use the unifying principle that subordinates all his activities to a central aim. The monopoly of power by a single idea, this organization of knowledge at a vital point is a powerful means of achievement in the world's work and likewise in individual character.

A great book is the exposition of an idea. — Adam Smith in his book, *The Wealth of Nations*, worked out the principle of free competition in industrial life and became the founder of political economy. Henry George espoused the idea of the single tax, and a remarkable book was the outcome. A famous historical novel like *Ivanhoe* is Scott's marvelous rendering of the idea of knighthood in feudal times. *Les Miserables* and the *Scarlet Letter* are great books in each of which a single idea is vindicated. A political party, unless it is decadent and has become a mere machine, owes its existence and its usefulness to an organizing idea.

This concentration of thought on a single theme is likewise found in Shakespeare's plays, as in *King Lear* or *Macbeth*. Burke's masterly *Speech on Conciliation with America* is focused at one point, and so is Cicero's speech against Verres. Even a whole school of philosophers is tagged with one name, because one idea dominates their system of thought as was true of the Platonists, the Hegelians, and the Kantians.

The superior dominance and simplicity of ideas. — Two conclusions may be reasonably drawn from these citations: First, the vast world order and system of knowledge is simple because it is framed on the basis of

a very few preëminent, constructive ideas which permeate and illuminate the whole scheme of things. Second, the great thinkers are those who have discovered for us these far-reaching simplicities of thought. The master minds are those which have reached out to comprehend the master ideas that regulate the world. Corresponding to the endless variety and complexity of world knowledge there is an endless simplicity of fundamental ideas. There is an aristocracy of ideas that holds the reins of government over the democracy of facts. There is a hierarchy of ideas that rules by the *divine right* of superiority.

The great question. — We are now ready to ask the main question: "Can children be let in to these few great secrets of world knowledge? Can they grasp these fundamental simplicities of the world order?" We have been talking about the master thinkers among adults. Can children, who are beginners in knowledge, pick up these threads and trace out these simple fundamental continuities, the basal ideas? A mere glance at textbooks will show that children are on the track of world ideas. But they are thrown at the children abruptly without due preparation or perspective or sequence.

A proposed plan. — Most of these ideas are already in the course of study, and the children are at hand with whom we may make the experiment and test the results. Because of serious faults in our present plan of studies and in our method of teaching, the results in power of thought are not at all satisfactory. A reorganization of studies founded upon a strong emphasis and cultivation of basal ideas running through the

course is now proposed as a solution of the curriculum problem. By beginning early and taking plenty of time, we may work out a few ideas completely and connectedly, and a few are enough. The success of this plan depends first upon the selection of good starting points for this work early in the grades. We need first-class demonstrations of these ideas suitable to children. Are there stories, poems, songs, outdoor excursions, and activities that express these ideas vividly and carry over into the life of primary children? Is there, then, a set of vigorous projects and enlarged object lessons which will capture and engage the thoughts and interests of intermediate grades? Will these same ideas expand in later years to larger dimensions so as to build up and strengthen the earlier studies? Can we build this ladder by which children —

. . . “rise

From the lowly earth to the vaulted skies,
And mount to its summit round by round”?

We aim simply at the continuous development of a few strong ideas growing constructively throughout the years of school life. Such a plan must depend entirely upon the original receptive endowment of children for such ideas and their capacity for development during these years.

Respect for the thinking power of children. — Emerson once said that the first qualification of the teacher was to have respect for children. In recent years children have received much consideration from those willing to learn from them. Remarkable changes have taken place in our plan and method of dealing

with them. The total suppression of their physical activities at school and elsewhere, once common, has given way to a modified freedom. We have learned to respect their overplus of physical energy, to make room for it as a strong reënforcement of the school program, and even to give it a first mortgage on the school plant. But the release of natural physical energies seems to have brought with it a release of mental powers that we had scarcely suspected. Their big brains are active and energetic as well as their muscles. Mind and body seem to be in close coöperation, and the arousal of the one affects the other, and teamwork is the result.

Results of emancipation. — At any rate this physical emancipation of children and the partial release also from the old bondage to alphabets and primers have called forth a new course of study for children in the primary grades, a course fruitful in thought and abounding in rational activity. As a result of this improvement the primary school is now probably the best school in our whole system from top to bottom. Children in the primary school are beginning to live in a genuine fashion and in the process are taking on many of the best elements of culture in our social order. We have ransacked the world from ancient nations down to the present to find thought materials in story form good enough for children in the primary grades. In our home neighborhoods we have despoiled nature in forest and garden and on the roadside so as to let the children into her secrets. They have engaged in housebuilding and weaving and pottery and agriculture in the effort to discover what uses are being made of these products

and resources. In the midst of these things they have mastered their phonics and spelling and numbers about as well as usual. Children in the primary grades are now learning in a natural way many things that would make old folks wiser.

The advantage of children over adults. — We have been forced, against our old prejudices, to believe that there may be a freshness and vigor in children's thinking not found often among adults. Ideas may be relatively more potential with children, more efficient to shape character and conduct, than with adults. While everything else is growing, ideas also expand into blossom and fruitage. In other words children are in the nascent state, and in health their appetite for food may be no stronger than their zest for ideas. We may be compelled to believe that even primary children are intelligent, *i.e.* have ideas.

The gradual emergence of mental control. — Mind and body alike are highly energized in younger children. The impulsive tendencies are very strong, but ideas also are pushing to the front and tend to acquire an ascendancy in this realm of spontaneous physical action. Even before they reach the school age, children are under the guidance of ideas and well-formed motives, as is shown in their games and childish projects. Their attention is monopolized by stories that touch the deeper truths of life. The constructive exercises in primary grades develop foresight in planning and lead on little by little to technique in construction and design. The muscular and physical powers of children are thus gradually brought under the sway of ideas. It is indeed natural and fortunate that ideas arising in

vital connection with these early spontaneous motor activities should be developing into control. The ideas that thus arise naturally out of a child's own activities are the focal points upon which thought, feeling, and will are centered. The school, of course, directs its efforts to certain projects as centers of organization without which life, with its surplus energy, might run to waste and be frittered away on many things. Even now this happy union of physical and mental forces in children under the dominance of thought is exhibited in continuous social projects, in stories, and in dramatizations. A first-year class is busy for weeks at a time in working out a plan for house and home construction and decoration.

Precaution against the sway of formalism. — The fact that ideas are in the lead in early childhood and are yoked up intimately with these early physical activities bears closely on teaching processes. Exercises feeble in thought and rigid in form have small place in earliest education. Little children should be first awakened and strongly nourished with ideas; otherwise they may be swamped by the formalities of early teaching. Wise parents induct their children into the thought world of song and story and social games and activities before sending them to school, so as to protect them against the too great formalism of the school. If these prime sources of culture have suffered neglect in early years, the primary school should try to make good the loss. By applying the lever at this point the teacher can lift all the exercises of the primary school into the bracing atmosphere of vigorous action and thought. Thus equipped the child will not easily

stagnate in alphabets, in reading, in spelling, and in numbers.

First provide mental storage batteries. — The machinery of forms and drills can be introduced in due time, but it is well to keep the machinery of learning somewhat in the background, at least long enough to give the little folk time to work up a strong headway in thinking. There is constant danger of damming up the natural current of thought with the supposed machinery of thinking. It is wiser to accumulate mental storage batteries so as to generate thought movements strong enough to break through the formal obstructions. Child life is full of impulsive energy, and it needs only direction in proper thought channels to give it a full volume of beneficent power.

The middle grades still hold fast the old formal routine. — Already the primary school has been largely reconstructed on the basis of freedom and thought enrichment. The intermediate grades on the contrary are well established in the old formal traditional method and have not been reorganized adequately in conformity with modern principles of teaching. The textbooks, with their bare outline treatment of topics, are in full possession of the field. A deductive method of general statement prevails throughout all this work. The only marked exception to this rule is found in the use of stories and choice selections in literature for the reading exercises. There are apparent exceptions in geography and history, but the condensed treatment of nearly all the topics in the textbooks, even of those in the story form, is strongly manifest. The introduction of new studies from time to time has so greatly enlarged

the course that continued condensation has been unavoidable. We are attempting to teach a multitude of topics in all studies in a scant and wholly inadequate way. In spite of various efforts to relieve the formalism and abstract quality of our studies in these grades, because of the inevitable expansion of the course, the evil has been growing greater instead of less.

A reconstruction necessary. — The trouble is that the present plan of studies in intermediate grades is largely wrong and needs to be reconstructed. There are no principles upon which the present course can be defended. A very large part of the lessons in these grades is stupidly dull and lacking in thought stimulus. Children are not getting the cultural and practical ideas they are entitled to in these grades. What they do get is much garbled and confused. It is too vague and general.

The beginnings of the strong thought movement are in the middle grades. — It is of extreme importance that we get children started right in the intermediate grades, for the plan begun here is continued through the grammar school into the high school. A muddled instruction in these middle grades is sure to leave its trail of disaster along the whole line. In the fourth grade we take up for the first time the discussion of important ideas in history, literature, science, and geography, which, if properly initiated and developed, constitute the suitable foundation upon which the whole succeeding course is to be constructed. It is here that we should be laying the intellectual or thought basis of the structure of knowledge. The positive insertion of a few big substantial thought projects is the

only adequate means, and there are no substitutes. There is little doubt that the dull and trifling treatment of important topics in these grades threatens to annihilate the thinking powers just at the time when they spring to the front and dare us to the trial. As teachers we must accept the challenge and give these children a chance to think on large topics. The great march for the gold fields begins in the middle grades.

A fixed program and a powerful backer. — The school at present usually lays down a fixed and formal program for children of these years. But it often happens that children who were alert in the first grade have become listless in the fourth and fifth grades, and in the seventh and eighth they have reached a settled indifference. This descent of children into sluggishness is not a good sign; it is contrary to the natural growth and exuberance of youth. The strong native current of thought and action does not stagnate unless it runs against serious obstructions. Unfortunately these obstructions in middle and grammar grades are partly the artificial work of the schoolmaster, and he may acquire such an admiration for his own handiwork that it is very difficult to dislodge him. He has also a special advantage in the fact that he holds the fort. He makes or selects the textbooks and the course of study. He teaches the lessons or directs the teaching, and he sets the examinations. He has whipped things into shape to suit his own notions. He is "lord of the manor" and a very hard man to deal with on his own premises.

The combination of devil and taskmaster. — There is a large amount of formal work to be done in intermediate grades, and children are well qualified to

do it. Shall we therefore put these formalities in the forefront and work through them into knowledge, or shall we set up the standard of ideas and compel the forms to play attendance upon them? In the intermediate grades we meet the same old devil of formalism with whom we have been acquainted before. The hoary old scamp has entrenched himself here for the final battle. He has dug in, and it will take heavy artillery to blow him out. In fact he has no intention of being blown out. He has full confidence in the strength of his fortifications and of his extensive barbed-wire entanglements. He has something more impregnable than the Hindenburg Line.

Our conviction is that the battle royal for a good course of study must be fought out to a finish in the intermediate grades — fourth, fifth, and sixth grades. The forces of conservatism have encamped along this battle front with its frowning breastworks, and they have a quiet confidence based on the fact that the whole organization is behind them. There is only one thing that might cause the archfiend and his followers to be faint-hearted, and that is the knowledge that one or two ideas exploded under his works are powerful enough to blow them into oblivion and leave nothing but shell holes.

A few noble projects corresponding to the mental caliber of children. — In education also we may well believe that ideas sooner or later will have to be reckoned with. Children of the intermediate grades are not now receiving their share of the educative world ideas. They are crammed with facts and forms and excluded from noble creative ideals. A series of

projects and imposing object lessons should be brought within their reach which they are fully qualified to master and understand as demonstrations of important truths. The intermediate grades open up the great world of knowledge to children for the first time. The scope and meaning of a few generative ideas, as broad interpreters of the world, can unfold themselves strikingly to children of these years. This is based upon the presumption that these boys and girls can think and appreciate giant thoughts, in other words that they are brainy and aggressive in their thinking. The larger projects here proposed for their study correspond to the caliber and scope of their minds, and to tie them down exclusively to the elementary rudiments of formal school exercises is a mistake of large dimensions. It is a double mistake. It is a failure in the first instance to take the measure of mental capacity in children. But in the second case it shows the bigotry of dictating a program to twenty-three million children on a false basis. In education the offense against childhood is the failure to understand and appreciate children. Beware lest ye offend one of these little ones.

The past master in education. — Instead of the combination of devil and taskmaster for boys and girls of the intermediate grades we need a superior brand of the boy scout leader or teacher-companion who embodies also the wisdom of Chiron, the wise old centaur, who educated the Greek boys — those who afterward became the fabled heroes of that wonder age. Chiron had a liking for boys and they for him. Although very wise and austere, he was an intimate and cherished

companion of these boys and instilled into their minds noble ideals of virtue and self-control, and they went forth to do great deeds.

Projects of large scope new and old. — Children of the intermediate grades are small in size but mighty in ideas. They are in the anticipatory stage of development where great ideas appeal to them. There is a deeper understanding and agreement between them, for example, and Hercules. They would do the same deeds. Theseus and Robert Bruce, William Penn and John Paul Jones are their friends and peers, just the natural, right sort of people, "good sports."

The active response of children. — For children of this age modern projects are just as good as the old heroic ones. Captain Eads scouring out the mud bars at the mouth of the Mississippi to let the big ships in is just as much of a hero as Hercules clearing out the Augean stables by a similar process. An explorer like Magellan or Champlain is a trusted companion with whom a child will share his last crust. Children's minds expand freely to the comprehension of projects in Western irrigation, in canal building, in the appropriation of water powers, in mountain-road engineering and tunnels, and in uncovering mineral resources in coal and iron and petroleum. They are prepared to speculate on the value and success of remarkable inventions, as the power loom for weaving, the quadruple rotary printing press, or schemes for tunneling under rivers, for the purifying of water in cities, for preserving meats and fruits in transit, refrigeration, etc. They are concerned with the construction of medieval castles and modern forts, with the cotton and wheat markets

on a world scale. Hannibal's great project of crossing the Alps against Rome, the story of Robert Bruce, of Socrates, of Gustavus Adolphus, of Peter the Great and the founding of Petrograd, and of Cromwell — these and other well-told stories of daring enterprise furnish the intellectual drill grounds of these ambitious-minded everyday boys and girls.

A side light from the history of education. — The doctrine which we have been applying to younger children — ideas first, forms and symbols second — applies with redoubled force, we think, to older children. The prime elements of knowledge and the springs of action are the fundamental ideas, not chiefly the symbols and forms. The dullness of school life is due to a lack of ideas or to a confused and perverted method of dealing with ideas. Three hundred years ago Comenius discovered the stupid monotony of language study (Latin) without significant thought. The three hundred years of varied experiments in teaching since then are a series of demonstrations of the futility of such exclusive formal teaching. The whole progressive movement in modern education is toward an earlier and keener experience of ideas. The main steps in this movement are familiar to students of the history of education: First of all, get ideas gained (1) through pictures, (2) through objects, (3) through nature study, (4) through making and construction, (5) through projects.

A hibernating period. — The fourth and fifth grades have been looked upon commonly as a sort of interregnum between the primary grades and the grammar school, where not much is doing except busy work,

language drills, spelling, writing, memorizing addition and multiplication tables, reading for fluency, etc. Young, inexperienced teachers are usually turned into these classes to try out and shift along until they get some control of teaching technique. The children are kept drilling and memorizing in preparation for the time when they will begin to think and reason. There is much marking of time and a great amount of retardation. Children do not seem to remember what they learn, and an excessive amount of drills and reviews is necessary. Under this régime average children do not show much mental vigor, and teachers do not expect much.

Slandering boys and girls. — If the above description of what is going on in intermediate grades is correct, it is none the less a libel against the real character of these boys and girls. By a libel is meant something false and defamatory. These children are not sluggish by nature. They have been educated into sluggishness. They have been drugged. At this age they have a keen and responsive intelligence. There is no spot in the whole course of education between the kindergarten and the college where there is such a collected treasure of strong and stimulating knowledge suitable to children — stories from literature, poems, ballads, biographies of great characters, descriptive projects and object lessons in geography and science, stories of travel and of invention, dramas and epics, to say nothing of actual projects in garden and shop, in laboratory and on the playground.

The real character and quality of these children. — Moreover these varied and stimulating thought projects

have been tried out with children, and their vigorous, almost boisterous, response has been demonstrated. We are not here straining after a point, trying to pretend that all children are precocious. But we are trying to take the measure of the natural mental resources of these children. Parents usually think better of their children than do the teachers. We smile at the fond mothers and hopeful fathers. But perhaps one reason why parents think well of their children's abilities is that they know them better. At least they know them better in their active moods. The tests commonly made by teachers in the routine work of the school are along very narrow drowsy lines, and on account of the meagerness and leanness of content are wholly inadequate to bring the active powers of children to the surface. For this reason we should require variety and strength and bigness of thought, large, active, constructive projects, into which children can throw themselves spontaneously and let out their full mental energies. It is now well known that children from the fourth to the sixth grade will plunge into bold industrial and social projects and come forth loaded with facts and ideas which they will group together and discuss with marked intelligence.

Reasons for sluggishness. — Other reasons may be given for the prevailing habit of underestimating the intellectual powers of intermediate children. The great majority of people still look upon the whole elementary curriculum as a drill on forms and symbols, a mastery of the tools, rather than the opening up of broad and imposing fields of thought in history and literature and geography and science. Indeed the

failure to recognize the energies bundled up in these children engaged in engrossing thought studies of the middle grades is chiefly responsible for the labored routine and agonizing dullness of this school period. But projects set up desirable achievements in thought, and children take to them as the birds take to the air. Energizing ideas must have the first place. Ideas, like the electric current, may be the least tangible, and yet they are the most potential forces in child life. Whatever they may lack at first in conscious clearness, they more than make up in impulsive energy.

The healthy mental growth of millions of children at stake. — Our main purpose thus far in this chapter has been to discover and strengthen the deeper thought basis for studies in primary and especially in intermediate grades. This demand for the thought enrichment of the school course springs, however, not only from the course itself but also from human necessities or, we may better say, from the imperatives of child nature. We slow teachers are like belated travelers, and we should try to catch up with the children. The mental happiness and welfare of tens of millions of children hinge upon the outcome. Shall these children open their minds intelligently and responsively to the plans and purposes of life on its higher planes, or shall they be dull plodders in a weary routine? Can the foundations of knowledge itself (not a mere acquaintance with symbols and forms) be laid in the minds of children in these middle grades? Should the secrets of the world order in which they live be revealed to these children in large object lessons, in stories and biography, and in social and industrial projects?

Preparation for grammar grades. — The preoccupation of children and teachers with formal studies has had two serious consequences: First, it has produced a dull and tedious course of study devoted chiefly to memory drills; and, second, it has closed the eyes of teachers themselves to the higher intellectual and spiritual powers of children and has thus given them such a backset that they are not ready for the proper studies of the grammar grades when they reach them. If, on the contrary, in the middle grades we introduce the children to large and engrossing projects and build up vital centers of thought along a few important lines, they will be well prepared for the expansion of these same ideas into new fields. This continuity of developing thought from grade to grade on the basis of fundamental ideas is the backbone and spinal cord of a genuine course of study. If our thought material in these middle grades is formal and feeble and fragmentary, there is no good thought foundation on which to build in grammar grades.

Grammar-school studies are often a rehash of previous work. — In fact the work of the seventh and eighth grades up to the present time has consisted largely of a tiresome rehash of these earlier unsuccessful studies, and a more unsatisfactory and unwholesome situation in school affairs is hardly conceivable. The children have been over these same topics repeatedly. There is little or nothing new, and there is not enough of enlargement to constitute a new revelation of the subject. A dull review of already dull subjects produces an unhappy climax of dullness. This tends strongly to become a treadmill system of study in

which progress is at a minimum. In the eighth grade, teachers are often at their wits' end to interest and hold the children together, to arouse their jaded ambitions. Our present course of study sometimes bars the entrance to the fields Elysian; and yet these fields are in plain sight just over the fence.

A close continuity of thought studies. — On the supposition that children in the middle grades have made some real progress in thought studies and have built up strong centers of knowledge and interest, for example, in the earlier simpler parts of American history and biography, it is easy to see how topics growing out of these earlier situations may expand into vigorous and liberal studies on a broader scale in the grammar school. The success of later studies depends upon the right kind of earlier contacts. This is commonly acknowledged, but teachers have failed to see that these earlier engagements, to be of the right kind, must be rich in thought, grounded in full and stimulating knowledge of big breezy topics. Why should we expect live studies to spring out of earlier dull studies? Having once put a quietus on thought and interest in intermediate grades, what reason have we for thinking that children will suddenly blossom out into strong thinkers and enthusiastic students in grammar schools?

The culminating values in grammar-school studies. — The course of study in the common school should culminate in grammar grades in a grand layout of noble and inspiring projects. The superior content of earlier studies gives promise of still more fruitful fields of knowledge. Here indeed the portals open wide, and the grammar school turns the children into regions of

thought up to the full measure of their mental deserts. At this point the large scope of democratic education for the people is made clear. It is in these years that children should come to a lively consciousness of the real character and meaning of our American life — the principles and ideals upon which our society is built. To make this teaching effective we must have a series of really great and inspiring studies: not scraps of information, not tedious lists of facts, not skeleton outlines. A few important themes should be elaborated and expanded into a convincing demonstration of those ideas which have been most active and powerful in developing our country and in shaping our institutions. History and geography and science have been at work, with their sleeves rolled up and their loins girded and their minds intent upon the mighty tasks and projects that have been achieved in this country during the last three hundred years and more. The big topics are the significant achievements of our poets, explorers, and statesmen, of our merchants and preachers, of our editors and railroad builders, of our farmers and manufacturers, of our scientists and inventors. It is an inspiring story not equaled elsewhere in the history of the world.

The Americanized product of the school melting pot. — The way to Americanize all the various races of children growing up in this country is to let them live over again the outstanding typical experiences of the men and women who have built American society. The purpose of all this is that boys and girls may come to a clear understanding of the important things that are going on in America to-day. The melting pot

where this higher amalgamation of races takes place is the public school, not a dull school but a live, energetic school with a vital, regenerating course of study. The minds of children must be put into a ferment. The thought ingredients cast into this melting pot must have a kindling power. Children get a direct experience during their growing years of the spirit and achievements of America so far and an intelligent outlook upon the future based upon such achieved sentiment and knowledge. The results aimed at set up an educational problem of unsurpassed interest and importance.

Single-minded devotion to the central purpose. — All the resources of knowledge of our own nation and of the civilization we inherit from Europe are at our disposal, and we shall need the best of it all. But a host of trivial things must be overlooked or set aside so that we may focus attention upon the main issues, the few constructive ideas. We must strip ourselves for the race, as the Apostle said, and not be weighted down with excess baggage. For with single-minded devotion we must follow, through the whole course of study, the energetic expansion of a few masterful principles of thought. This in a nutshell is the gospel of the reorganization of the curriculum. We have now discovered that we have at hand and under control the abundant streams of refreshing knowledge which pour their currents into the channels marked out by these curriculum-building ideas.

The competency of grammar-grade children for great studies. — Are the boys and girls of the grammar school equal to the task of understanding our political,

social, and industrial life, the spirit and value of our American institutions? There is much ground for the belief that they are not only mentally equipped for this great task but that their native mental energy demands just this opportunity. To hold them back from this kind of achievements is like checking our impetuous boys before the Hindenburg Line. The full exploitation of these large teaching units is the only means by which we can test the thinking powers of children. Experience with such topics as the Panama Canal and the British Colonial System gives grounds for increased confidence in the mental resources of these children. The real question after all is not whether children can think but rather whether teachers can get ready to lead in these vigorous thought campaigns.

In our honest efforts at progress we have made some mistakes. The important truths or principles for which we contend are now present for the most part in our curriculum, but they are not much in evidence; they are obscured. They are in the private ranks, not at the head of the column. They should be drawn out of their deep privacy and obscurity and placed in full command. We are still in the hands of the great rabble of commonplace facts, not under the sway of simple, illuminating ideas. In our blundering efforts to get at the best, we have wasted much time on second-, third-, and fourth-class substitutes for the best.

Unreasonable demands for thought from children.
— Perhaps the poorest form of teaching is that of presenting important truths to children in condensed, truncated form. This is, however, common practice.

Such abortive instruction results in a mutilation of great truths. It is a helpless effort on the part of children to interpret important ideas, as it were, in the dark, unaccompanied by that setting of practical and scholarly information in which the idea reveals itself in its full meaning. By this blundering method of curt abstraction we strip the subject bare of thought elements and then accuse the children of inability to think.

The fact is that under such circumstances even teachers are doing precious little thinking but are dealing out verbal commonplaces and platitudes that have no vital force. It is time to put an end to this worse than nonsense in teaching. It is a curious and lamentable fact that the data upon which the most important truths rest are not supplied in our present curriculum. Still more astounding is the fact that few educators seem to regard this as a matter of serious consequence. We are perpetually demanding, in no uncertain tones, vigorous independent thought activity in children, but with studied indifference we have gone on in the process of denuding all the important topics till they stand out as hideous skeletons. They stand alone without substance of thought and without relations.

The remedy. — Strange to say, just at this point where educational processes have suffered a complete relapse, a slump, we are permitted to discover the remedy. These very same standard ideas which in our skeletonized modern course have been brought into contempt should be raised into honor.

When the prophet came into the valley of dry bones, the Lord said unto him,

"Son of man, can these bones live?" and he answered, "O Lord God, thou knowest."

And the Lord said unto these bones, "Behold I will cause breath to enter into you, and ye shall live. And I will lay sinews upon you, and will bring up flesh upon you, and cover you with skin, and put breath in you, and ye shall live."

The resurrection of ideas. — Expressed in the form of an allegory this is what should happen to our mummified course of study. The important ideas which have been buried in this graveyard of dry facts must be resuscitated, clothed with flesh and blood, filled with the breath of life, and sent forth on their educational mission. An imposing unit of study which is the embodiment of a grand idea at work in a complete life environment is the only adequate expression of the life energy which should characterize every educational effort.

The successful energetic response of children to great topics. — It is well known from frequent demonstration in classrooms that boys and girls respond with *abandon* and with determined effort to the impact of these masterful topics. They satisfy these children with the fullness and richness of their thought content. The success which children of intermediate grades have had in dealing with large topics like the Erie Canal has been more than equaled in grammar grades in dealing with topics of still larger scope, such as the reconstruction of great cities or the inauguration of constitutional government. Such well-organized teaching units, appropriate to the mental strength of grammar-grade children, might well be called masterpieces

of the teaching art, because they are the outcome of long-developing thought processes which culminate in grand projects of typical world importance.

Vital topics must engross the attention of teachers.

— Somehow the attention of teachers and educators should be drawn strongly toward these vital topics, these cumulative centers of knowledge as powerful units of thought. They need to be discovered and put on exhibit till they force the attention of teachers. The process of sifting out these important thought units has been going on, but it needs to be greatly accelerated. It would more than double the significance and value of our present course to drop out the poorer two thirds, retaining these organic centers of thought for enlarged, intensive treatment. That limited fellowship of powerful constructive ideas which has received the deliberate sanction of thoughtful teachers, and those more recent achievements of human thought which the best experience and judgment deem worthy to be placed beside the old leaders will surely be recognized as the organizing basis for our developing course of study.

This great problem of reconstruction is now up before those who plan and administer the course of study. Educators have been repeating and emphasizing the demand that children be trained to think. This just demand for thought now recoils with redoubled force upon our educational leadership. The weakest spot in our whole system is the defective thinking of those who as leaders assume to make the course of study. There has been precious little deliberate, substantial thought on this absolutely fundamental problem of the organization of the course of study. The course of

study itself is not so bad, if only our leaders in thought knew how to select and utilize its best materials and values. It almost appears that our leaders are not doing much better thinking now than they did as children back in the grades, because they are thinking still on those same limited lines. At least they fail to break loose from these narrow circles of thought and show how to reorganize the course on a liberal, comprehensive plan. Our leaders have been temporizing with a great and serious problem.

Leaders of thought should not forget to think. — The trouble lies in the fact that even in education it requires first-class thinkers to conceive and think through great thoughts; and if ever there was a profound thought problem, it is this of planning the curriculum of the common school.

Excuses. — We have some excellent excuses to offer in behalf of those who have not time to think. These practical educators are busy about many things — many, many other things — and cumbered with many cares. The great problem of reorganization must wait awhile. Perhaps it will somehow work itself out. The result is that in the meantime children too are kept busy with many, many other things, are left in a maze of half-hearted activities, and do not come out into the open fields of thought, do not reach the stage of intelligent citizenship.

The problem of the thinker. — We now need a strong leadership in downright educational thought. It must be comprehensive and profound. It involves constructive thinking along practical lines on a life basis. It must understand and appreciate children. It must

correlate studies on a unified plan. It must bring the child and society into a coöperative development. In the end it should set the child up in the business of living in this world to the measure of his opportunities and obligations.

Coöperative thinking. — This vast project of reorganizing the curriculum on a sound basis will demand the best coöperative effort of profound, devoted thinkers, of broad-minded, efficient administrators, and of thoroughly equipped and experienced professional teachers. It will have to be reënforced by a powerful, effective consensus of educated opinion. Clear aims and purposes, broadly conceived and intelligently comprehended, are essential to this reorganization of the curriculum on a simple thought basis.

SUMMARY

Ideas furnish the thought centers around which knowledge is organized.

To get the idea that lies at the basis of any large grouping of facts is to illuminate the whole mass with intelligence.

The scope of a single idea — its far-reaching interpretative power — is almost beyond belief.

A few such ideas seen and realized in their full scope furnish a means to the mastery of the world.

These few ruling ideas simplify the whole vast system of things and give man his complete supremacy through the power of intelligence.

The course of study should demonstrate the full organizing power of these basal ideas.

In fact important ideas should have the right of way through the course and draw all other things in their train.

This quality of preëminent leadership possessed by fundamental ideas is due to a vital, indestructible energy which is theirs by nature. Because of this, Plato called ideas the only realities, all other things being derivatives from these vital energies.

Ideas are the creative organizers of the world, and in practical affairs this is literally true.

A great inventor like Watt seizes upon a new idea, that of the steam engine, and the whole world of transportation and manufacturing must be reorganized around that idea.

Pasteur discovers the germ idea of disease and the whole science of medicine has to be reconstructed. Pasteur curiously was not a physician, and yet by virtue of his idea he compelled all physicians to take notice and to reconstruct their practice.

Sterility of thought in school studies is another name for lack of ideas.

Our present course of study is too much given to the smothering of ideas, especially the important ones.

A great man is one who is large-minded enough to grasp one of these ideas with its life-building energy.

Can children grasp these secrets of world knowledge and build up a thought-world that corresponds to and interprets the world of experience?

The primary school has already made a good start in the cultivation of ideas as a basis for knowledge.

The intermediate grades are still largely devoted to the traditional routine of formal studies, and the grammar grades go on repeating a long series of dull generalities.

In intermediate grades we should start in with a luminous and inspiring treatment of a few great ideas in the shape of typical life projects and then continue this series of great and simple studies through the grammar grades.

A few ideas worked out continuously and connectedly are enough upon which to construct a course of study.

We shall have to place some faith in the thinking power of children, and we shall need the teachers who can keep well in advance of the children in reflective and constructive thought.

Leaders in education have been demanding that children be required to think. By all odds, yes! But these leaders themselves should think more soundly. They are responsible for securing a course of study which has the elements of thought in proper solution. Otherwise their talk is an overflow of rank hypocritical cant.

QUESTIONS FOR STUDY

1. For what reason is an idea likened to a gold mine?
2. What were some of the ideas for which the Greeks were remarkable?
3. Explain why ideas are called "intelligence centers."
4. Give illustrations of the energy found in ideas.
5. What is meant by "the birthright of children"?
6. Why are ideas suggested as a groundwork for the curriculum?
7. In what ways may we show respect for children?
8. Explain why the work of the middle grades is singled out for special consideration.
9. Why are the devil and formal methods classed together?
10. Why is a program of ideas so important in intermediate and grammar grades?
11. Suggest a plan to determine the mental ability of children in the middle grades.
12. What reform movements in modern education give stress to ideas?
13. Explain the seeming sluggishness of children in the middle grades.
14. How can the middle grades best prepare the ground for grammar grades?
15. State the higher purpose to be achieved in the grammar grades.
16. Under what conditions can we demand real thinking from children?
17. What would be a standard test of educational *leadership*?

CHAPTER IV

TYPICAL LIFE PROJECTS AND ILLUSTRATIONS

The difficulties of reconstruction. — Reorganizing the course of study on the basis of typical life projects is an undertaking of no small magnitude. The present vast framework of studies with the habits and traditions that cluster about it must be treated with respect, its good features preserved, and its faults corrected. The radical changes already made and those now in progress are proof sufficient that it is to be a process of deliberate reconstruction on a large scale. It is to be remembered also that more than a half-million teachers and above twenty million children are to be housed in this educational building while the repairs and reconstruction are in progress. It reminds one of the torn-up condition of New York's streets, the mingling of traffic and reconstruction along Broadway while the subway was under construction. A brief survey and summary of the difficulties necessarily involved in this reconstruction may serve as a preface to the arduous undertaking: first, the present miscellaneousness and congestion of studies due to rapid and spasmodic accumulations of new materials; second, the inevitable reduction of studies to skeleton outlines due to these overaccumulations; third, a natural unwillingness to abandon outworn and obsolete subjects which have

long held a respectable place in the course; fourth, a complete isolation of each study as if there were no important relations with others; fifth, an emphasis on dry factual knowledge with little grouping of facts around thought centers and, in consequence, a very serious lack of steady growth in fundamental ideas from year to year.

This predominance of the factual over the thought elements produces a dry iteration of facts instead of a strong growth of stimulating thought. In brief the present course of study shows little respect for organized thinking and for the fundamental connections. The quantitative bulk prevails over the qualitative idea, and higher standards of value are lost to view. We now emphasize a multitude of trivial things, and the important things are treated in a trivial way. Instead of minimum essentials our present course might better be named a maximum of nonessentials.

In the natural course of things the textbooks are the summing up and expression of the present status, combining its merits and its faults, its orders and its disorders, its expanding elements and its confusions. The most convincing proof that could be given of the five points stated above would be a compulsory effort to teach well the whole range of school studies as laid down in the regular textbooks.

An expedition after big game. — A flat proposal is now made to reorganize studies around central teaching units. We have a plan to mass attention and effort upon the strategic centers of knowledge, to wage war against ignorance by a bold and resolute attack upon a few strongholds. These few knowledge centers should

be expanded till they fill the whole horizon of thought while a multitude of less important items should dwindle until they disappear from view. We can now afford to drop the popguns and toy pistols, seize the long-range rifle, and go out for big game.

The best exhibit yet made of this new style of organization of studies around vital thought centers is found in *typical life projects*. The project has made its appearance and has come into prominence at a time of need. The demand for rallying points as centers of organization never before has been felt so keenly. What are these typical life projects which, brought to the front and clothed in full panoply, are to be the active agents in this great enterprise?

What are projects? — The ordinary meaning of the term "project" in the common affairs of life hits the point exactly. Projects are enterprises undertaken by boys or girls or by men and women looking toward desired results. Boys come together and agree to form a club and to fix up a baseball diamond where they can play the game. Business men and capitalists form a company for surveying and building a railroad. Women organize a club for social purposes. Little girls construct and fit up a playhouse. A general plans a campaign. A boy builds a sled in anticipation of a snow. Projects are as numerous and varied as human minds are active and enterprising.

The boy preparing for his spring garden has a specific enterprise which looks toward a definite result. The architect planning and supervising the construction of a schoolhouse combines with others in working out a project. All such projects are in the midst of

life; they are directly responsive to practical needs and expressive of the life energy.

The typical project. — A typical life project is one which exhibits in concrete demonstration a principle of wide scope which later comes to the front again in a score or a hundred other like projects. This demonstrated principle is the clarifying thought that interprets a whole series, running, it may be, into thousands. Fulton's project for constructing the first steamboat was the objective demonstration of a typical machine which embodies the idea of all later steamboats and steamships. It gave a new and permanent direction to vast energies heretofore wasted.

Five features of projects. — The project has been seized upon recently and used as a powerful instrument in carrying on the work of education. A rapid survey of the meaning and scope of projects will show their positive influence upon instruction and upon the organization of the curriculum.

1. Projects may be grouped into those of children and those of adults, although they frequently overlap. Nothing better illustrates the child's real thoughts and impulses than the projects he is busied with — from building blocks to tree houses and gardening. Likewise nothing better betrays the character of the man than his enterprises of the project type from business to pleasure. From childhood to old age the test of character and achievement is found in the projects conceived and carried out.

2. Projects are individual or social. Children combine in social undertakings and work out coöperative schemes. Adults do the same on a larger scale. The

biography of a great man is the record of his successful venture, as Columbus' great project or Hannibal's expedition against Rome. The life of David Livingstone is the absorbing story of his exploring and missionary projects in Africa, and so with Benjamin Franklin and Florence Nightingale and Cecil Rhodes. Cities have their municipal projects and nations their national achievements, as the pyramids of Egypt and the old Roman roads. The chief project of Peter the Great was the founding of the city which bears his name. The business world in all its leading aspects is a world of projects, of vast commercial, agricultural, manufacturing, and mining enterprises.

3. The project attracts attention to itself because it contains a powerful initial impulse. Everybody is an eager spectator of an important beginning enterprise. It embodies the spirit of endeavor and achievement. The dynamic element is at its maximum. It calls into action and organizes individual and social energies and urges on to results. Because of the progressive idea involved in one project it is not satisfied but pushes on to other similar achievements. Columbus was only the first great explorer; others follow. A real project has a second and third stage in its history. It lives several lives and continues to prolong its days. Its energy does not waste.

4. The project demands wise forethought in planning. It looks far ahead and counts the cost. It is thoroughly rational in its requirement of sound thinking as a basis for later action. It must satisfy the conditions of life and is in this sense strictly practical. The later execution of the project enforces this

practical adjustment to absolute necessities. The project surpasses all formal school studies in this subordination of conduct to the blunt requirements of real life.

5. In the two stages of its development the project is a complete demonstration of the combined inductive-deductive method in learning. It is tied down at the start, and strictly, to a full exhibit of one concrete example, and this is followed by other examples till a sound basis of induction is reached. The evolution of the type and its variations and applications to new cases provide further induction and deduction. This fundamental thought movement brings facts and ideas into proper relations and gives the true balance between facts and growing ideas. The ideas develop out of the proper grouping and sequence of the facts.

The deeper concord between child and adult. — These five strong features of the developing project are significant for the child and are equally significant for the adult. In dealing with projects, therefore, the child and the adult show a remarkable concord of spirit. The difference is in the size and scope of projects, not in their fundamental nature. This harmony of spirit between the child and adult is further shown by the child's early and frequent imitation of adult projects. By virtue of their imitative instinct children from the earliest years are constantly encroaching upon the projects of adults, playing doctor or schoolmaster, mother or father, builder, farmer, hunter, etc. They copy likewise the games and recreations of their elders, as baseball, horseback riding, etc.

Children's thoughts are turned toward the larger world. — A study of children's playthings, including

miniature tools, machines, and apparatus, will show a remarkable leaning toward engines and railroads, automobiles, wagons, garden tools, guns and firearms, hunting and fishing tackle, airplanes, tool chests and equipment, boats and ships, printing presses and type, trolley cars, looms and weaving apparatus, stoves and household furnishings. Children of their own choice are certainly on the direct road toward adulthood.

These things show moreover that children are stepping over boldly into the larger social and industrial world. They are concerned about world projects. They go not only to the picture shows and circus but to the church. The Sunday school is getting to be as important as the church itself. Children's social parties sometimes even interfere with school work. The boys with their wireless equipment at home are listening in and are disturbing the wave movements reserved for the world's news. The newsboys are a very important contingent in the newspaper business, and we are impelled to make laws to keep children out of the factories and in the schools. The call of the world is too strong for many boys and girls in grammar grades and even lower, and they "skip." Boys and girls read the newspapers and know as much about the Panama Canal project probably as their fathers and mothers. In spite of the school the big industrial projects going on in the world reach the children and stir their blood. In reality the big projects of the modern business and political world are what children crave. As stated before, there is an inner concord between child enterprise and world doings. The typical life project is the "open sesame" which admits children to the great

secrets of the world order, to the principal buildings and departments of the world exposition. The child is reaching out after his birthright of world experience whether the school helps or hinders.

The project is a means of vital contact and identification of the child's own spirit with the ongoing processes of the world life. It offers the same freedom and scope to the human spirit that the actual world order allows and encourages. Yet in spite of its variability the typical life project always develops in its school treatment through two marked stages which can be sharply defined and plainly illustrated: first, an individual concrete manifestation of the basal idea; second, the expansion of the idea through a process of comparison and reflection developing into a series of projects.

Children's projects. — We may mention three types of projects that play an important part in teaching; the first is the child's own project which springs directly from a personal need and desire; for example, the little girl making a doll bed. She finds some boards and with small hammer and saw and nails shapes and fashions a bed for her doll. The boy in the yard plans and builds a tree house, or he may make a chest in which to store his tools, or the boy and girl together may plan and work out a home garden. A group of boys are seen constructing a cave house or an Indian tepee for such uses as they further have at heart. There is an infinite variety of these self-chosen tasks, individual and social, which children devise and execute — the more, the better.

Suggested projects. — A second type is one undertaken by children at the suggestion of the teacher, as

dramatizing the story of Damon and Pythias, a game with bean bags with the purpose of counting scores, the cutting of colored-paper forms for decorating the schoolroom, the making of costumes to suit the different actors in a play, preparing the working drawings to show how to build a playhouse, writing a composition explaining how to plan a picnic dinner, making a model to show the construction of a canal lock, the devising of a homemade telephone, the preparation of an aquarium, planning a spelling match, finding a story to be read for the entertainment of the class. Almost any lesson can be converted into a project by shrewd suggestion on the part of the teacher, and in many cases an added interest and zest are given to the class instruction by such devices. The so-called city government by which children organize themselves into an assembly for discussing matters of common or social interest is a form of project. A good project is usually a means of encouraging self-direction and initiative. The resourcefulness and ingenuity of teachers may be exercised in full measure in suggesting valuable projects and in encouraging children to select and work out their own projects.

Larger life projects. — A third type, or project enterprise, is found in the larger world of human affairs where men and women are engaged in the serious business of life; as the first Atlantic cable, the construction of Brooklyn Bridge, the organization of a political party, the construction and management of a city waterworks, the writing and publishing of a book or of a newspaper, the survey and construction of a railroad, the preparation and passage of a tariff bill in

Congress, the building and operation of a cotton mill, the survey and layout of a city park, the invention of the sewing machine. The great world of action outside of school is busy with projects. It is a world of men and women engaged and absorbed in planning and executing a host of varied enterprises. Most of the natural undertakings of children suggested above are small introductory projects leading up to these larger, mature schemes of adults. They are often miniature reproductions of the larger actions seen in their elders; as setting up a store, keeping school, building playhouses, playing the doctor, fishing and hunting, and games. This project plan furnishes a natural and continuous development through spontaneous, engrossing typical activities from early childhood and youth to the responsible undertakings of adult life and of society in its still larger social enterprises. Here is an educational ladder, a process that is continuous and constructive throughout the whole period of life. It is all of one piece.

The broom-corn project. — An example of this growth from simple local beginnings to larger and yet larger dealings with the world is the broom-corn project worked out recently in one of the Cincinnati schools. By some accident (the birds probably dropped the seed), a broom-corn stalk came up in the school yard. It was discovered by the children, and care and attention was given to it so that it developed and matured its seed. The suggestion was made and followed up that it would be well to save the seed and raise a crop the next season. On a small, not very promising plot the seeds were planted the following

spring and the plants cultivated till quite a fine crop of broom corn was raised. It proved to be of excellent quality for broom making, and the children became interested in the process of broom manufacture. They brought in some old brooms and pulled them to pieces to see how they were constructed. It became known that there was a broom factory not far from the school, and an excursion followed and an observation of the raw materials, machines, and working processes made. Written accounts followed from this excursion. It was decided to harvest carefully the crop of broom corn and have it made up into brooms. As a result, to the delight of the children, thirty-five brooms were returned to the school. The interest in this subject continued and several factories were found to be located in the city. The Government bulletins on broom-corn culture were sent for and studied, the children writing the letters. It was found that Kentucky and Ohio were important broom-corn states, but other states, as Missouri, Kansas, and Oklahoma, produced the largest quantities. A map of a dozen or more of the important states producing broom corn was made by coloring an outline map and the production of each state was placed in figures on this map. A natural result also was a comparison of broom corn with maize and an estimate of the relative profit per acre from broom corn and maize. Beginning in this small way this topic developed into gardening and agriculture, factory processes and machinery, collection and distribution of products by commercial routes, and a survey of this business in its geographical extension. It is a good type of the raw production in agriculture, its passing

into manufacture and commercial handling, and the sale of the finished product. It involves a whole series of connected purposeful projects.

The Nashville stockade and an Indian project. — At Nashville a project of particular interest to children is the reproduction in miniature form of the old stockade or fort consisting of log houses and palisades and massive wooden gate. Still another project connected with this old rectangular wooden fort is suggested by the lively story of the last desperate effort by the Indians to capture the place — a project showing Indian strategy. In some thick bushes on the hill slope, a quarter of a mile below the fort, a large force of Indian warriors was placed in ambush. The following morning a small body of Indians on horseback rode up toward the gate as if to attack it. This was a challenge to the brave men within the fort to battle. Robertson and a dozen or more men on horseback threw open the gate and rode out to meet them. After a little skirmishing the Indians retreated down the slope, the white men pursuing. When the whites were a half-mile from the fort, the Indians sprang from their ambush and shut off the retreat. The white men then dismounted in readiness to fight and their horses being released galloped back toward the fort. Many of the Indians ran off to capture these loose horses. Mrs. Robertson, in the fort, seeing the dangerous plight of the men, threw open the gate and let loose some fifty fierce dogs that were kept within. These dogs, barking and growling as they went, made a furious dash upon the Indians. While the Indians were chasing the horses and fighting these furious dogs, the white men managed to break

through the line and reach the fort, leaving a few of their companions dead on the field. This was the last effort made by the Indians to capture Nashborough.

This local story of Indian warfare and of a stockaded fort at Nashville suggests others of similar character in Kentucky and Ohio and in other states east and west. An exactly similar effort was made by the Indians to capture Boonesboro, and Daniel Boone was severely wounded and carried back into the fort by his friend Simon Kenton. Braddock's defeat, in which Washington figured, was due to a similar ambushade by Indians. The battle of Oriskany on the Mohawk and St. Clair's defeat in Ohio show the same type of Indian strategy. The more extended study of the struggle of the Indians with the whites in America will reveal the fact that the attack on Nashborough interprets the spirit and method of Indian warfare in this country for three hundred years. Thus the study of a local history topic and the working out of local projects wisely used throw a strong light upon a whole succession of important topics throughout our history.

Home projects open the way into the big world. — Home projects like these, springing out of the direct environment of children and suitable to their needs, open the gates and make a clear passageway to many of the most important topics in later study.

In intermediate grades we come in contact with those larger projects in history, geography, science, and literature, which open up important sections of that beckoning world that lies just beyond the home, though dealing with subjects intimately related to the home interests. The vastness and variety of knowledge

materials offered at this entrance upon the larger world and its seeming complexity compel us to exercise our best wisdom in selecting the types to be studied. Teachers have been struggling with this problem for years but the inrush of new studies and the swift increase in modern educational needs have kept the curriculum expanding into larger and yet larger dimensions. The time now has come to reorganize. We are face to face with a serious problem of reconstruction on a big, comprehensive, and simple plan.

Examples of major projects. — Under the pressure of this excessive modern curriculum the demand for simplification on the basis of a few central projects has grown steadily stronger. Teachers have been expanding their minds to take in the larger proportions of these major units of knowledge. In the place of the present tedious and almost endless enumeration of facts and items, a limited group of major projects is set up, each of which exercises dominion over a large field of knowledge; for example, the purchase of Louisiana, which set the pace for our vast territorial expansion; the framing of our Federal Constitution of 1787, whose governmental structure after a century's growth is the most imposing political fabric in the world; the steel production at Pittsburgh, one of the outstanding enterprises of modern capital; Burgoyne's campaign in the Revolution with its far-reaching results; the growth of the Pennsylvania Railroad System to its colossal influence upon national traffic; the influx of foreign people and the effects of immigration upon the growth of the United States; the invention and progressive use of the steam engine in its

various forms; the engineering and sanitary problem of the Chicago water supply and drainage. These genuine projects are colossal in size, simple in thought, and concrete in demonstration. They bring into bold relief the prominent forces at work in human affairs.

Big projects interpret modern life. — The organization of such teaching units, while comprehensive in scope, is simple and natural in orderly development. Such bold object lessons frame up the world to children in grand pictures and panoramic surveys. The Brooklyn Bridge, the Panama Canal, a battle fleet, and a flying squadron of airplanes are quite as striking and wonderful as Aladdin's palace or the adventures of Hercules and of other demigods of the olden time. These vast projects of our own age are expressions of the brawny and brainy builders of our new world. They formulate the plans and work out the processes of our modern institutional life, such as city governments, churches, universities, insurance companies, canals and traffic routes, ocean steamship lines, mining, manufacturing, and banking companies, publishing houses, and metropolitan newspapers. Expanded into complete and powerful object lessons, they interpret the modern world in its predominant activities. They are the strategic centers of enterprising thought, and it would be safe to surmise that they are destined to be the chief constituent units in reconstructing the curriculum.

The project unit applied to various studies. — We may observe in schools of all grades from primary to university unmistakable tendencies among curriculum makers to adopt the large unit, or type-study plan.

Even the recent textbooks in history and geography show strong symptoms of this reconstructive principle at work. Sufficient numbers of these large organized topics have been worked out and tested in classroom instruction to form a basis for judging their value as standard measuring units for class work, and as a ground plan for the progressive reconstruction of the curriculum. This plan should be deliberately tested out as fast as the central topics in the main thought studies are selected and brought into well-organized, elaborate treatment. For reading and literature many of the standard units have been selected and put to service, even in the earlier grades, as "Aladdin," "Ulysses' Adventures," "Hiawatha," and "Robinson Crusoe." Nature study and applied science furnish excellent themes for the monographic treatment of fundamental types, as the life history of the milkweed butterfly, the story of the beaver, a squirrel family; the biographical stories of important discoveries and inventions, as Gorgas' experience with yellow fever, Stephenson's first locomotive and its application to railroading, Howe's sewing machine, Morse's telegraph, and Marconi's wireless. Many of the important topics in history and geography are best conceived of as comprehensive projects, for such they were in very fact, as Peter the Great's founding of Petrograd, Luther's translation of the Bible, Magellan's venturesome voyage, the Suez Canal, the Eads' jetties at the Mississippi Delta, the Niagara water-power project.

New Orleans treated as a series of projects. — A recent and apt illustration of the large projects is the harbor improvement now under way at New Orleans.

The history of New Orleans for a hundred and twenty years and more is the stirring account of a progressive series of expanding projects. The first settlement under D'Iberville was a scheme of expansion by the French. The purchase of Louisiana under Jefferson's direction was a project for getting control of the mouth of the Mississippi River as an outlet for the commerce of the great valley. Its other possibilities were so great that statesmen were dazed by its magnitude, and many thought the purchase price so extravagant that it would bankrupt the Treasury.

The levees and jetties. — For a hundred years New Orleans has been deeply concerned in the construction of levees as a means of protecting the city from disastrous floods, recurring each springtime. For many years the shallow mud bars at the delta's mouths prevented the entrance of ocean vessels and almost ruined the city's commerce. Captain Eads' wisely conceived project of building the willow-mattress jetties as a means of producing a deep passage through this shallow mud bar was worked out with full success and completely removed this obstruction to river commerce. This has been descriptively worked out and used as a typical life project in river improvement.

A problem of increasing difficulty at New Orleans has been that of handling the growing volume of products coming by ship from abroad and by railroad and river from the interior. At the river front where ships and railroads meet, it has been necessary to work out a series of imposing projects for harbor improvement including wharves, warehouses, and dock machinery for the handling of goods. The numerous

railroads centering at New Orleans and the thirty-eight lines of ocean steamers that dock along the river front have brought on a steady increase of traffic in a great variety of staple products.

Effect of the Panama Canal. — The completion of the Panama Canal and its opening to world traffic have had a powerful influence toward increasing the commerce of New Orleans and in the future are likely to increase it more and more. It not only opens the way for big traffic along the west coast of North and South America but also with eastern Asia and Australia. The development of trade with South America and Mexico alone offers an immense traffic, and the shortening of trade routes to the countries surrounding the Pacific Ocean may shift a large part of the American trade to New Orleans. New Orleans is about 600 miles nearer to Panama than is New York City. The products of the Mississippi Valley, the production center of the United States, can be shipped much more cheaply to New Orleans than to New York, Philadelphia, and other Atlantic ports. Even in sending products to European countries, New Orleans is a nearer and cheaper port than New York for a large part of the Mississippi Valley. The concentration of great railroad lines at New Orleans, even without the river traffic, is bringing a vast quantity of raw products into New Orleans. The competition of the river traffic with rail routes will keep railroad rates down at all times, because the lower Mississippi River is open to traffic throughout the whole year. It does not seem unreasonable that the natural drift of commerce down the Mississippi which was so strong in the early

history of the great valley should be restored, and products on a large scale should find their natural outlet to the markets of the world through New Orleans.

This increasing concentration of world commerce at New Orleans has brought out the fact that the eight miles of dockage along the river front are totally inadequate to meet present and future demands.

The Inner Harbor or Industrial Canal project. — In addition to the docks and harbor advantages along the river front for many miles, the Dock Board has recently undertaken a great engineering project which will double the shipping and harbor advantages of New Orleans. This project is known as the new Inner Harbor or Industrial Canal. The Inner Harbor, already well under way, opens up a new outlet to the sea for the commerce of New Orleans by way of Lake Pontchartrain.

On the east side of the city a broad and deep canal is being excavated which reaches from the river back to Lake Pontchartrain. A deep channel through the lake and a passage out into the deep water of the Gulf will be dredged out so that large ocean vessels may come into the city harbor by this new passage. The distance to the sea is only about half as great as the way down the river and through the jetties.

This Industrial Canal is six miles in length from the river to the lake and three hundred feet wide.

One great advantage of this Inner Harbor is that the water remains nearly at the same level, which is really sea level with little tide, while the River changes more than twenty feet between low and high water. This new harbor will thus be more convenient for

loading and unloading ships. At the river end of the canal is a lock six hundred feet long and seventy-five feet wide and thirty feet deep, which will allow large vessels to pass back and forth between the open river and the Inner Harbor. At any stage of water in the river, vessels can pass through the lock into the Inner Harbor with its fixed level. About a mile back from the river entrance to the canal, it broadens out into a turning basin for ships, one thousand feet by eight hundred and fifty feet. At one end of this turning basin is an eighty-acre shipyard, and another large shipbuilding plant is located at the lake end of the canal.

The Dock Board at the present time is spending about twelve million dollars on this new Inner Harbor, but it is estimated that the work when fully completed with a thirty-five foot passage to the open sea will cost twenty-five millions. Along the sides of this new Inner Harbor will be built docks, sheds, and warehouses for the movement and storage of goods. On both sides of this broad canal private companies can establish packing houses, steel rolling mills, coal and lumber yards, shipyards, automobile works, flour mills, chemical works, and warehouses of all kinds. At the river entrance to the canal the Government of the United States has built three great depot warehouses six stories high and a wharf and wharf house nearly half a mile long.

The Inner Harbor is also served by the Public Belt Railroad which connects the river front and all the docks and railroads.

It is called the Industrial Canal, because it supplies

opportunity for the establishment of all kinds of private industries which was not possible along the river front. It also offers an easy approach for coal barges from Alabama and for lumber and other raw materials coming in from the coastal regions.

New Orleans has also been deeply concerned with projects that relate to the improvement of navigation along the Mississippi River and its great tributaries.

Deep waterways to the Gulf. — A group of important projects for improving the Mississippi River navigation has been brought to public notice frequently of late years, known as the "deep waterways to the Gulf." It has been seriously proposed to make a deep, wide, twelve-foot passage for large boats and barges from Chicago down the Illinois to the Mississippi River. This would open the way for a cheap traffic in heavy products from Chicago to New Orleans and return. The Chicago Drainage Canal project, costing many millions, already supplies forty miles of such a deep waterway, and by extending it down the Illinois and by deepening the lower Illinois River such a cheap and commodious water route can be provided. The Illinois Legislature at one time approved the construction of this deep waterway at an expense of twenty million dollars. In like manner the upper Ohio from Pittsburgh to the Mississippi, and the upper Mississippi from St. Paul down were to be deepened and made navigable for large steamboats and barges.

If these plans should be carried out, as is not unlikely, a rapid increase in river traffic on these great Western rivers may follow, and the trade of New

Orleans with the upper Mississippi Valley will be much increased. The eastbound trunk railroads which now carry most of the heavy products eastward to New York, Philadelphia, Boston, and Baltimore would naturally object.

It has been claimed also by some traffic experts that the river traffic will never be restored, first, because the railroads are so much speedier in loading and transporting goods and, second, because the loading and unloading of heavy goods along the river wharves are so difficult and expensive. We know, however, that the water traffic on the lakes and Eastern rivers like the Hudson is very extensive; also on the rivers of Europe. The Panama Canal on the ocean side opening up world traffic and the deep waterways on the land side gathering products cheaply from the whole Mississippi Valley are likely to greatly increase the importance of New Orleans as a world port.

Manufacturing projects. — In working over cheap raw products into manufactured forms New Orleans has already made great progress. The sugar refineries, the rice-cleaning plants, the great ship-building yards, the flour mills, the packing houses, the planing mills and woodworking plants, the canneries for syrups, the iron foundries, and machine shops are examples of these industrial projects already developed.

New Orleans has peculiar and even remarkable advantages for developing manufactures: first, the vast quantity and variety of cheap raw products constantly pouring into the city from the Mississippi Valley and from foreign countries; second, a great abundance of cheap fuel in coal, petroleum, gas, and wood; third,

cheap and abundant transportation of goods in many directions both by water and by rail; fourth, plenty of reasonably cheap and contented labor; fifth, a mild climate with less expense for food, clothing, and housing.

The construction of the new Inner Harbor is designed largely to furnish a good location on deep water for the establishment of manufacturing plants where raw materials, fuel, and transport are most inexpensive and easy. It is probable that New Orleans now stands at the beginning of a vast increase in her manufacturing activities.

A strong combination of influences. — It is worth while observing that a commanding seaport like New Orleans, furnishing the central commercial outlet to an immense valley and river system for a century and more, has been directly and vitally interested in a succession of costly projects far and near, including the jetties, the river levees, the local harbor improvements, the deep water navigation of the Ohio and upper Mississippi, the Panama Canal, and the establishment of industrial plants. The projecting of steamship lines and railroads centering here have been likewise an expression in large part of the enterprising spirit of the people. In the execution of all these imposing projects, the city, the State Government, and the United States Government have made large contributions, while engineers like Captain Eads and statesmen like Jefferson have also greatly contributed to these successful ventures.

Comparisons. — Before leaving this topic it will be profitable to set up a comparison of these New Orleans

projects with similar important harbor improvements and excavations at Galveston and Houston. Among these are the massive sea wall at Galveston for the protection of city and harbor, the opening of a deep passage up the bayou to Houston, and the excavation of a broad turning basin within the city limits. Ocean vessels now sail into the great bay, up this deep passage to the turning basin and unload and load their cargoes at the Houston docks and warehouses.

Galveston and Houston. — Galveston and Houston with numerous railroads radiating into Texas, Oklahoma, and other states control an extensive trade area in the Southwest and compete with New Orleans for cotton, rice, lumber, and other products. The number of railroad lines centering at Houston, as shown on a railroad map, is equal to that of New Orleans. New Orleans has the advantage, however, of the river trade, whatever that may be worth.

San Francisco. — Although San Francisco has a magnificent natural harbor, the increase of trade which followed the opening of the Panama Canal has stimulated expensive harbor improvements, such as the construction of extensive docks and the excavation of a deep harbor channel and the building of a sea wall at Oakland across the bay from San Francisco.

Los Angeles. — On the coast to the south of Los Angeles, at San Pedro, a large outer and inner harbor has been developed under the protection of a break-water extending two miles into the sea. This was constructed by the Government at an expense of three million dollars as a part of the harbor improvement. But the Mississippi Valley which forms the hinterland

for New Orleans and Houston is far greater in extent and production than the valleys of California on the Western coast.

Portland. — At the mouth of the Columbia a shallow and dangerous bar obstructed the entrance of vessels *en route* to Portland. Storms and fogs added to the dangers of this river entrance. At great expense the Government has constructed jetties and opened a deep passage for ocean vessels, which reminds us of the similar project at the mouth of the Mississippi. Portland like New Orleans is about one hundred miles from the mouth of the river. Which has the better position for developing trade, Portland on the lower Columbia or New Orleans on the Mississippi?

The Atlantic seaports. — The Atlantic seaboard cities, Philadelphia, New York, Boston, and others, have likewise undertaken vast harbor improvements. Examples of this are the blowing up of the rocks and the opening of a clear passage at Hell Gate, New York, and the dredging out of the great bar just outside of the Narrows so as to open a deep passage for ocean ships into the New York harbor. The cities on the Great Lakes, Chicago and Cleveland and others, have excavated deep passageways along the channels of their small rivers to handle the immense shipping developed on these inland waters.

National scope of these projects. — From these numerous and important examples of costly projects in the way of harbor extension and wharf construction we may draw the conclusion that the development of world traffic centering in our chief seaport cities has been one of the marked features of progress on a world

scale and has produced a series of great national enterprises of the first rank.

Port projects in Europe. — Indeed a later comparison with European port cities will show that they have been engaged in still larger projects. Glasgow during a century spent a hundred million dollars on her river dredging and harbor excavations and dock construction. Liverpool, Antwerp, Hamburg, Marseilles, and Petrograd have forged to the front in vast harbor-expansion projects.

By following this line of thought to its natural consequences we are convinced that the progressive nations of the world in the last hundred years have been turning a large part of their wealth and energy into projects of harbor extension. The increase in size and draft of ocean vessels and the development of a vast merchant marine have brought on a more extensive interchange of products between all nations, and the great seaport cities have been compelled to expand and duplicate their harbor facilities. The future development of international exchange along the ocean highways gives promise of a still greater expansion. The Panama Canal itself is the foremost of all projects for the improvement of ocean trade.

The developing world scope of such projects. — In the later study of geography, the story of harbor advantages and improvements can be extended to the ports of Asia, Australia, Africa, and South America. The development of deep and commodious harbors fully equipped with modern docks and machinery opens up a remarkable chapter in the history of man's ingenuity and resourcefulness in adapting himself to

natural conditions. Such a topic is found to have a very broad scope, first, as it bears on New Orleans in its numerous and far-extending relations at home and abroad and, secondly, as the same idea of harbor improvement is applied to various seaport cities on the American seaboard and later to other ports standing guard over the gateways of commerce for other nations. Such an elaborate study of two or three chief seaports of the United States (New York, New Orleans, and San Francisco) with such a progressive comparison with other American ports as is natural will cover a large extent of American geography. It illustrates clearly the concentration of extensive knowledge around one central developing thought, which furnishes a full understanding of a multitude of salient projects in the modern world.

A teaching project so extensive and many-sided as New Orleans as a Gulf port would require at least a dozen or fifteen lessons with fifth- or sixth-grade children. The second stage of comparison with other seaports on the Gulf coast, as well as on the Pacific and Atlantic coasts and on the Great Lakes, will require several lessons, not to speak of later similar studies in seaports of Europe, Asia, etc. The New Orleans topic naturally includes not only the immediate harbor improvements of New Orleans but also such projects on the Mississippi as the Eads' jetties, the extensive levee system, the deep-water navigation of the Northern streams, and river dredging. It is also associated closely with the explorations of La Salle and D'Iberville, with the Louisiana Purchase, and with Andrew Jackson and the Civil War history. The expansion of

the topic which brings in a comparison with other ocean and lake ports leads into well-defined series of big topics on great seaport cities. The following series of typical projects on river and ocean ports has been elaborately worked out and handled in class instruction: 1. New Orleans as a Gulf port. 2. San Francisco and the Golden Gate. 3. The growth of Chicago. 4. The harbor and shipping of New York City. 5. Glasgow harbor improvement and shipbuilding. 6. The rebuilding of Vienna. 7. Petrograd, founded by Peter the Great. This list might be further extended by studies on Constantinople, Calcutta on the Ganges, and Rio Janeiro in Brazil.

On the basis of this earlier elaborate treatment of American ports the later topics could be handled rapidly in much less time.

A simple series of such related units worked out in the grades and closely connected and organized into a developing sequence would illustrate our plan of organization through the grades.

Enrichment of individual projects. — If the proposed plan of reorganizing studies on the basis of typical life projects is to be made effective, the important centers of organization must be wisely selected and arranged. What is still more difficult, each of these large teaching units ought to be elaborately developed and enriched from scholarly source materials and expanded into a comprehensive thought movement. Who is to combine this liberal survey of all studies with deep, practical scholarship in individual topics? Each of these important type studies, like a monograph, should be a masterpiece of productive scholarship combined with

simplicity and pedagogical appropriateness to children. It is an educational enterprise of the first magnitude, and it lies on the exact level of the daily needs of the school. A group of strong, scholarly, practical teachers is needed who are willing to roll up their sleeves, take the pickax and dig down to the roots of knowledge in every important school topic that deserves to rank as a center of organization.

Who is to lead in organizing and enriching these large units? — The great majority of untrained teachers have no qualifications for such intensive organizing scholarship. Even experienced, well-trained teachers are too absorbed and preoccupied with the numerous details of teaching in several subjects to find time for such original effort in elaborating big topics. The scholarly specialists in colleges and normal schools have the full equipment of knowledge necessary for such intensive work in special branches of study, but their minds have a strong bent toward the academic instruction of adults, and this highly urgent problem of the elementary school has not yet caught their attention and interest. The pedagogical specialists in our normal schools, colleges, and universities are not engaged in this work but are devoted to an educational cult which deals too much in generalities and verbal distinctions and definitions touching education. The fruitful, instructive working out of special themes, organized into a rich concrete setting, is a sweaty, burdensome, toilsome enterprise demanding profound knowledge, research, originality, and unabated enthusiasm. It is not one of the phases of a soft pedagogy. Grasped in its full scope and in its deeper values, however, this

task of reorganizing the elementary course of study on a sound basis of typical projects is inexpressibly important and inspiring. It would be difficult to name any problem in modern civilization of equal value.

SUMMARY

As a means of overcoming the difficulties of dealing with our present disorganized curriculum, it is proposed to concentrate study upon these central, typical projects, the larger units of organization.

Such projects are peculiarly appropriate to children because they are full of life impulse and activity and lead directly into the outer world of affairs toward which the children have such a natural powerful drift.

In the realm of concrete life projects the child and the adult are in full accord and are developing straight into the field of a broad intelligent citizenship.

The project is the means of incorporating the child's energetic spirit into the ongoing world processes.

Life just outside of the school walls is made up of such enterprising projects, but they are not easily discovered in school books nor in the thoughts of schoolmasters.

The demonstration of any single project like that on broom corn or that on the New Orleans harbor improvement demands an extensive treatment. It is no small matter to work out adequately one of these important projects. The idea which is the motive power in the development of such a project demands a strong practical life setting.

The later chapters on the Virginia Plantation and the Louisiana Purchase will furnish still more complete demonstrations.

QUESTIONS FOR STUDY

1. What is the principal difficulty in the reconstruction of the curriculum?
2. Is there anything new in the project idea of teaching? Explain.
3. How do projects introduce a child to the world?
4. Give reason for placing so much emphasis on the *type*.

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5. When and where are children to get started in project studies?

6. Explain the relation between child projects and adult enterprises.

7. Name the kinds of projects most suitable for the schools.

8. Enumerate the values suggested by the broom-corn project.

9. Is this extensive treatment of New Orleans as a Gulf port advisable?

10. State the arguments that may be offered in favor of the use of large projects.

11. What is the relation of New Orleans thus studied to later geography topics?

12. Name one other topic and show how it would require an expansion similar to that of New Orleans.

13. Who is best qualified to work out and organize these large projects?

14. What are some of the chief practical difficulties in using these fully developed large units?

15. How is the large project to be distinguished from what has been heretofore known as the important topic?

16. If we were to base the curriculum chiefly upon large projects, what changes in textbooks would naturally follow?

CHAPTER V

THE VIRGINIA PLANTATION — A TYPE STUDY IN PROJECTS

The descriptive setting for a project. — In the treatment of a typical life project it is of no little importance to decide how elaborate and extensive the descriptive account should be. Where there is an important idea to be developed, as in the case of the Virginia Plantation, it requires a liberal amount of time and effort to collect and organize the appropriate descriptive facts that furnish a complete setting for the idea. In this case it is needful to reproduce a historical situation which has a central motive and numerous side lights. So deep-seated and far-reaching is this idea in its influence that it is only gradually, by tracing out its important bearings, that we discover its dominant quality. This constructive, expanding thought-process leads on step by step to a complete objectification of the idea as a powerful organizing agency in the midst of the hurly-burly of life. It develops into a great historical object lesson with a central motive powerfully active and influential in the world's business. In other words this Virginia Plantation, as a typical life project, takes up a good deal of room in the historic world, and there is no way of cramping it in the school treatment into a small space without destroying its meaning and value.

Only a few fully expanded projects proposed. — This is one excuse — and it is a good one — for spending so much time on one topic, one big teaching unit or project. It is worth while to make this point plain because we have the set purpose of constructing a course of study out of such big topics, every one of which is a basal center of organization and fills a large place in the whole plan. Another way of expressing our main purpose is to say that we propose to concentrate attention upon a few main strongholds of knowledge and to neglect an almost interminable number of little things which have heretofore received considerable attention. It would be a grand forward step in education if we could show children how to pay their full respects to a small group of simple, fundamental ideas embodied in these large lifelike demonstrations. As one of these ideas travels its natural course within a thoughtful inquisitive mind, it seems to show two marked stages in its progress. The first is often called the concrete or descriptive stage, where the idea is first clearly identified and understood in one complete, lifelike setting. The second stage is that in which the idea, by successive applications to a variety of kindred phenomena, expands into a world meaning — a general concept.

Our applied psychology has long accepted the above-mentioned thought movement as fundamental but has almost totally failed to demonstrate its use on large constructive units of study. This failure to apply well-known psychological principles to the elaborate treatment of large teaching units is a fatal weakness in our present curriculum, because it makes no provision for the adequate treatment of these

central teaching units, the backbone of a course of study.

The Virginia Plantation an example of enlarged treatment. — The Virginia Plantation as here presented is an effort to illustrate this expansive treatment of an important project or unit of study. We need these central units developed on an enlarged, unprecedented scale. The proper full treatment of one of these big units may well strike us at first with surprise and incredulity. We seem to need this shock of astonishment as a means of recovering our mental balance and thus, as it were, forcing ourselves to acknowledge the predominance of a few pivotal units and centers of organization.

In the early settlement of Virginia the land was held in common, and the products were gathered into a common storehouse. But this plan of public ownership failed to bring growth and prosperity to the colony. Accordingly in 1614 Governor Dale made a beginning of private allotments of land to individuals. When Dale returned to England in 1616 there were 81 farmers tilling their lands privately while about 205 officers and laborers managed and cultivated the public lands. The entire population was 381.

There were as yet no plows, but much poultry; there were also a few horses and considerable numbers of hogs, goats, and cattle. Tobacco had begun to be cultivated and brought a good price.

The land system. — There was one commodity of which the company which settled Virginia had a large supply; namely, land — millions of acres of it, and the

various ways in which this land was distributed are of much interest.

One tract of land on the James of 1,000 acres was reserved for the clergy, 3,000 for the governor, 10,000 for establishing a college, and 12,000, in four tracts near the four chief settlements, were reserved for the colony as a whole for public purposes. Many large tracts of land were also granted by the company to certain groups or societies of wealthy gentlemen who were expected to send out emigrants and laborers to settle and develop them. The largest of these was a grant of 200,000 acres near the mouth of the Chickahominy River and called Southampton or Smith's Hundred. Three hundred colonists were sent by the landowners to settle this tract.

Martin's Hundred on the south side of the James contained 80,000 acres. Several other large grants were made to such groups, but this method of apportioning such large plantations or settlements used up the land too rapidly. Such estates, like English manors, were somewhat independent of the government of the province, and the head man or commander of such a settlement or hundred was sometimes defiant of the laws of the assembly.

A still more important method of land distribution was that of dividing it up among the settlers and adventurers. (By adventurers are meant the stockholders who had contributed money to the London Company as owners of shares.) Each stockholder who had contributed twelve pounds and ten shillings to the treasury of the company was to receive one hundred acres of land on the first division and another hundred upon the

second and later division of lands on condition the first grant was improved.

The head rights system. — It was provided also, by what was called the system of *head rights*, that for each person brought into the colony by a planter or adventurer and remaining for three years, the person at whose expense he came was to receive fifty acres of land on the first division and another fifty acres on the second division and perhaps likewise on the third. This system of encouraging the planters to bring servants or laborers into the province rapidly increased the number of people, insured a large body of laborers, and caused the land to be rapidly divided up among the settlers as private owners of either large or small estates. The smaller farmers worked on their own lands with a few laborers, while the owners of large estates had numerous servants and, later on, slaves.

Again, a free settler paying his own charges and bringing a family could receive one hundred acres on the first division, one hundred more on the second, and fifty acres on each division for each adult member of his family.

With the dissolution of the company in 1624 and the change of government, most of the land that had been reserved to the college and to the province was also divided up and distributed to private owners so that a complete system of private landownership was finally established. The people as a whole had become industrious and frugal, the laziness and wastefulness of the early days of common land and labor were over.

It is very evident that the rapid settlement of Virginia from 1616 on was largely due to the fact that

many people in England desired to secure landed estates in America and that even respectable poor men could secure good farms and by labor and thrift steadily increase their holdings.

The amount of rich, productive lands which Virginia had to distribute to settlers was the most important inducement to the early inhabitants of the province. The cultivation of tobacco was very profitable, and the wheat, corn, and vegetables raised, with the cattle, horses, sheep, and poultry, supplied the people with abundance of food, clothing, etc.

The importance of land questions is indicated by the fact that a large share of the laws and discussions of the first assembly of Virginia (the first House of Burgesses) related to the distribution of lands, to the rights of laborers and tenants on estates, and to the public grants.

A similar land system in Maryland. — Not only in Virginia but in Maryland and other colonies the question of land distribution was of the highest importance. In 1633 Lord Baltimore made an announcement of the conditions offered to settlers in Maryland. "It provided that each free planter should pay the cost of his outfit and transportation, which amounted to about twenty pounds. To every married man who thus provided for the voyage and for that of his family the proprietor promised one hundred acres of land for himself and one hundred for his wife, if she accompanied him, one hundred acres also for each adult servant and fifty for each child under sixteen years of age. Two thousand acres should also be given to each adventurer who in the year 1633 should take into the province for

the purpose of settlement five men between the ages of sixteen and fifty.

The purpose of these grants was to encourage the settlement of the country. The manor as a whole was almost an exact copy of the estate of an English country gentleman. There was the great manor house with its spacious rooms and hall; near by the chapel and the dwellings of the workmen (later slaves), while the estate was at first divided among the tenants holding leases for twenty-one years.

Land grants at New Amsterdam. — In New Amsterdam, during the earliest settlements, large grants were made to the patroons, who were lords of manors on a still larger scale. The Van Rensselaer family at one time ruled over a tract of 700,000 acres near Albany. Later, during the English rule, large freehold estates were established in New York with the purpose of encouraging settlement. The patroons, or large owners, sent out settlers equipped with tools and resources for developing the estate. The land of the estate was divided up among tenants who paid a rental. But a great many grants of smaller estates and farms of one thousand acres or less were made, and these small holdings in the end predominated.

In the Carolinas the first distribution of lands was in large estates, although a wider distribution among small holders followed later.

The coming of the Cavaliers. — The system of large estates or plantations was greatly favored and extended in Virginia by the coming of the Cavaliers in the period from 1649 to 1660. With the death of Charles I and the supremacy of Cromwell the Royalists in England

were put in an unfavorable plight, and many of them migrated with their possessions to Virginia. Governor Berkeley had previously invited the Royalists to settle in Virginia and offered them greater inducements than any other colony. During these eleven years after 1648 the population of Virginia increased from 15,000 to 38,000. At the same time the number of large grants, as estates, increased as follows: from 1651-55 three grants, from 1656-66 twenty grants, from 1667-79 thirty-seven grants. The size of individual grants increased also in this and the following period from 650 acres to as high as 10,000 acres. This rapid increase in population and also in the number and size of private land grants is directly due to this influx of well-to-do Cavaliers. They evidently came to America prepared to establish and develop large estates as homes.

The result after a few years of growth was a pronounced type of Cavalier gentlemen Americanized into plantation lords of Virginia.

A typical plantation or plantation project. — One of these Virginia plantations of 5,000 or 6,000 acres, with its tobacco fields, forest lands, "great house" and adjacent buildings, and the various groups of slaves, overseers, and white families belonging to it, presents a picture of free patriarchal life which has a peculiar interest and charm. The development and management of such a plantation is a typical American project. The great house of the owner, of wood or brick, stood upon some commanding site overlooking the river (James, Rappahannock, or Potomac) with broad lawns shaded by oaks, walnuts, or other forest giants. At the river was a landing where the large and smaller boats

of the planter lay at rest and where sailing vessels from London or Bristol unloaded their English goods and took on the hogsheads of tobacco or cargo of wheat. The plantation house had a large chimney at each end and a broad porch in front and a central hall with the big dining room on one side, corresponding to the great hall of an English manor house, or feudal castle.

The home house. — The planter's family might require from half a dozen to twenty rooms for sitting rooms, parlors, bedrooms, etc. Back of this mansion and separated from it, to isolate the smells and heat attendant upon cooking, was the kitchen with its great fireplace, fitted out with a complete collection of cranes, pothooks, kettles, gridirons, and other cooking utensils. The opening was sometimes twelve feet long, six feet high, and five feet deep, and it would be comfortably filled by a roasting ox. Such a fireplace, with its cooking outfit, is still seen in the kitchen at Mt. Vernon and at other old Colonial homesteads. The large family with servants and the lavish hospitality of the planter made it often necessary to equip the kitchen and dining hall adequately for feasting a large company of people.

At some distance from the great house was a hamlet of log huts or rough board structures, often of a tumble-down appearance, but teeming with the woolly heads of pickaninnies and older negro servants. These huts were furnished with a very meager outfit of stools and kitchen utensils. The houses of the white overseers were more respectable and nearer the mansion.

Other buildings. — The barns and stables and granaries, with the dairy and milk house or spring house, were

essentials to a plantation; the tobacco barns, for sorting, curing, and packing of tobacco, the smokehouse for curing hams and bacon, the blacksmith shop, a tannery for leather production, the carpenter shop and the room for spinning and weaving — all these were necessary on a big estate. In addition to these the plantation could often boast a sawmill for sawing up lumber from the forest for the various uses of building, cooperage, boats, etc., a brickyard, a cider press, a still for the manufacture of rum, and, most important, a store where goods landed from the English ships could be arranged and sold out to the various people of the home plantation and to those of smaller neighboring farms.

The garden. — The garden and the orchard also were a very important adjunct, and the flower beds were cultivated sometimes with much care. The forests supplied not only lumber and fuel but charcoal and game; the rivers and Chesapeake Bay added to the good things of the table — bass, terrapins, oysters, canvasbacks, and other waterfowl. There was now, unlike the old days of the starving time, a rich abundance of food and drink, and the reigning hospitality encouraged a lavish use of well-cooked viands. At that time there was probably no place in the world where people were better fed than in Virginia.

Gunston — the Mason plantation. — Some writers have described the Virginia planters as somewhat lazy and luxurious in their habits, but John Fiske, while admitting that there may have been some specimens of slothful planters who lay on their couches drinking punch and fanned by negro slaves, quotes from John Mason of Gunston, as follows: "It was very much the

practice with gentlemen of landed and slave estates so to organize them as to have considerable resources within themselves; to employ and pay but few tradesmen, and to buy little or none of the coarse stuffs and materials used by them. Thus among his slaves my father had carpenters, coopers, sawyers, blacksmiths, tanners, curriers, shoemakers, spinners, weavers, and knitters, and even a distiller. His woods furnished timber and plank for the carpenters and coopers and charcoal for the blacksmith; his cattle killed for his own consumption and for sale supplied skins for the tanners, curriers, and shoemakers; and his sheep gave wool and his fields produced cotton and flax for the weavers and spinners and his orchards fruit for the distiller. His carpenters and sawyers built and kept in repair all the dwelling houses, barns, stables, ploughs, harrows, gates, etc. on the plantation and the outhouses at the house. His coopers made the hogsheads the tobacco was prized in and the tight casks to hold the cider and other liquors. The tanners and curriers, with the proper vats, etc., tanned and dressed the skins for upper as for lower leather to the full amount of the consumption of the estate, and the shoemakers made them into shoes for the negroes. A professed shoemaker was hired for three or four months in the year to come and make up the shoes for the white part of the family. The blacksmiths did all the ironwork required by the establishment, as making and repairing ploughs, harrows, teeth, chains, bolts, etc. The spinners, weavers, and knitters made all the coarse cloths and stockings used by the negroes and some of finer texture worn by the white family, nearly all worn by the

children of it. The distiller made every fall a good deal of apple, peach, and persimmon brandy. The art of distilling from grains was not then among us, and but few public distilleries. All these operations were carried on at the home house, and their results distributed as occasion required to the different plantations. Moreover, all the beeves and hogs for consumption or sale were driven up and slaughtered there at the proper seasons and whatever was to be preserved was salted and packed away for after distribution.

"My father kept no steward or clerk about him. He kept his own books and superintended, with the assistance of a trusty slave or two and occasionally of some of his sons, all the operations at or about the home house above described. To carry on these operations to the extent required, it will be seen that a considerable force was necessary besides the house servants, who for such a household, a large family, and entertaining a great deal of company, must be numerous; and such a force was constantly kept there, independently of any of the plantations and besides occasional drafts from them of labour for particular occasions. As I had during my youth constant intercourse with all these people, I remember them all and their several employments as if it was yesterday."

Colonel Mason had some 500 persons on his estate and was known to have sent from his private wharf a shipment of 23,000 bushels of wheat at one shipment. To look after all this work would give a man little time for idleness.

The plantation was complete in itself, supplying from its own resources most of the needs of life: the

meat was from its own cattle, sheep, and swine; houses, barns, and sheds were built from lumber from trees felled on the plantation; leather was tanned from the hides of home animals, and the shoemaker made up the shoes; tobacco was raised and cured and shipped from the wharf; the plantation distiller made applejack, peach, and persimmon brandy from the fruits of the plantation; hemp and cotton gathered from the fields and wool from the sheep supplied the spinners, weavers, and knitters of the household with materials; the garden and farm furnished vegetables and grains for the use of the table.

The plantation store. — The plantation store was an important establishment where all those needful articles not supplied by the crude household industries could be brought from the ship from old England. It contained dry goods, millinery, hardware and tools, drugs and chinaware, jewelry and furniture, and finer grades of shoes, hats, cutlery, glassware, paper, books, and machines. It contained a miscellaneous multitude of the luxuries, trinkets, and necessities which in our day are sold in a score of separate stores.

No large city. — So complete in its own resources was the plantation and, with the assistance of the store, so self-sufficient in supplying all its needs (by its direct connection at its wharf with English ships) that towns refused to grow in Virginia. The general feeling in the colony was that they ought to have some big towns so as to be like their neighbors in Philadelphia and New York. Accordingly the House of Burgesses in 1662 passed a law requiring 32 brick houses to be built in Jamestown and forbidding vessels under heavy penalties

from ascending the James River beyond Jamestown for the purpose of landing goods or taking on cargoes of tobacco. The purpose was to compel planters and ships to concentrate their business at Jamestown. But the law was violated and disregarded. The plantation idea was the stronger, and the town remained puny and unimportant.

Dependence on British merchants. — One interesting result of the direct trade of British ships with the private wharves of planters was a growing and even disagreeable dependence of the planters upon the merchants in London and Bristol. All English goods and luxuries brought to the planter were paid for in tobacco, which had become the currency as well as the chief product of the colony. On account of their extravagant habits the planters grew into a credit system by which the coming crop of tobacco was often mortgaged for English goods needed on the plantation. The merchant was pleased with this credit system since it assured him the planter's crop on very reasonable terms and at the same time enabled him to dispose of his own wares at good prices.

Navigation Acts. — The Navigation Acts passed by Parliament, beginning in 1660, brought still further advantage to the British merchant. They required all tobacco, from Virginia to be carried to England by English ships and forbade the colonies sending their tobacco to Holland and other countries where much of it had been selling at good prices. The transfer of the whole trade to English merchants enabled them to monopolize the traffic and to pay very low prices. At the same time they were inclined to double the price on

their own goods shipped to Virginia. In Virginia there was also such overproduction of tobacco that planters could scarcely pay their heavy debts to the merchants. In other words the result of the Navigation Laws was that Virginia planters received half price for their tobacco and paid two prices for English goods. The feelings aroused by the Navigation Laws among the Virginia planters are therefore easily imagined.

Virginia hospitality. — It was natural for the Virginia gentlemen to exercise a bountiful hospitality. They set a good table, not omitting choice wines and strong waters. They kept a big household of servants; they entertained lavishly practically everybody who came. For it was by the interchange of long visits and by entertaining travelers they came in contact with the larger world. In dress and amusements they aped the manners of the English aristocracy. They sent their sons to Oxford to be educated. Weddings and funerals, where scores of people came long distances as guests, were expensive affairs.

The best breeds of fine horses were kept for riding and racing. The law fined the common man for entering a horse for a race. Horse racing was a sport only for gentlemen. Fox-hunting was a favorite amusement. When the planter entered his barge with his well-dressed family and liveried servants to descend the river to Williamsburg for the meeting of the House of Burgesses and to engage in the balls and festivities of the season, he did not distinguish himself by a modest appearance.

Leaders. — The planters held also a monopoly of political influence; they were the vestrymen of the

neighboring parish and determined local taxes and the choice of local officers and clergy. At the county seat they were the judges of the court, sheriffs, and other officers. At Williamsburg they served as members of the House of Burgesses. In brief they exercised, naturally, political leadership in local, county, and State affairs.

The planter — a regal patriarch. — The Virginia planter on his large estate, with his liberal hospitality and tributary household and slaves, was a sort of regal patriarch, a person of large independence and authority. This ideal of life which was cherished by the Virginia planters was a controlling influence in the Old Dominion. Even now it has a peculiar attractiveness. We look back upon that period as a sort of "golden age." Moreover, the families who best represented that era and those Virginia homesteads, as the Randolphs, Harrisons, Byrds, Washingtons, Lees, Jeffersons, Madisons, Masons, Tylers, and many others, have given us some of the greatest men in our history. The ideal of life which they cherished in their private estates was the central idea in their civilization and to a considerable extent spread to the whole Southland.

Burke, in his *Speech on Conciliation with America*, expresses the high spirit of independence in the Southern planters and well interprets its power and meaning.

Old Colonial houses. — In Virginia the centers of historical interest during the Colonial period are certain old plantation houses, as Westover, the house of Colonel Byrd, Upper and Lower Brandon, whose great houses still look down upon the James, and Gunston, where the Mason family resided for generations. Greenway

Court, Mount Vernon, and, later, Arlington have a historical interest in connection with Washington and the Lees greater than that of any cities in Virginia. Certain small towns, as Alexandria, Jamestown, and Norfolk, have historical significance, but the center of interest is the plantation house.

In other colonies Philadelphia, Charlestown, New York, and Boston are the historical centers, the places to which we turn for the study of important events, but to get at the leading characters and even assemblages of Virginia history we turn frequently to what is going on at Mt. Vernon or at Monticello or at the home of the Lees.

Important results. — The indirect results of this predominance of the plantation ideal of good living are worthy of observation.

(1) There were no large cities in Virginia. City life was not attractive to these people. They could not be induced even by severe laws to congregate in cities. They preferred the independence and amplitude of life on their estates. The short winter festivities and bails at the capital they enjoyed, but their homes were far more attractive. In our days the powerful drift is toward urban life, although the well-to-do are again betaking themselves to the country.

(2) There was no free school, and the widely separated plantations made it impossible to establish and develop a strong system of schools. The early life of Washington and of other Virginia worthies makes clear that the "Old Field Schools" were important in an early day, and the Virginians, many of them, had an appreciation of education but their situation compelled

them to resort to private tutors and governesses for the families of wealthy planters.

(3) Plantation life furnished a soil in which slavery flourished and grew strong. The presence of large estates and the cultivation of a single great staple product like tobacco made slavery very welcome to the planters. There were many individual planters like Jefferson and Washington who described clearly and deplored the growing evils of slavery. But the conditions of plantation life on the whole were so favorable that slavery grew like a weed in rank soil.

(4) In connection with this there continued a low, primitive state of agriculture. It was a broad, loose, and shiftless mode of cropping the land. As tobacco culture drained the soil of its strength, new forests were cut down and new fields opened, while the old exhausted fields returned again to forest. What we now call scientific agriculture with a proper rotation of crops and preservation of soils and improvements in products was unknown to the plantation.

(5) Side by side with aristocratic estates of the great planters there grew up a shiftless class of poor whites springing from the redemptioners, servants bound to labor, and occasional batches of criminals which were sent to Virginia from England. The plantation system from the earliest times demanded a cheap form of labor which was at first largely supplied by these lower orders of white servants and later by black slaves.

(6) Such a patriarchal agricultural system gave little chance for the development of manufactures. With the exception of the crude household industries

of providing lumber, blacksmithing, cooperage, tanning, dairy products, coarse weaving of cloths, butchering and smoking meats, brick making, and other common provision for food, clothing, and shelter, all finer manufactured articles were derived straight from England. English customs and fashions in dress, house furnishing, and amusements prevailed, and a complete dependence upon the mother country for manufactured articles was natural. Even to this day manufacturing has developed but slowly in Virginia.

(7) In conclusion it may be said that the planters constituted not only a social but a political and landed aristocracy. In point of intelligence, wealth, and political influence, they were leaders and makers of Virginia history.

The plantation system first developed strongly in Virginia. The extent to which it was adopted and became prevalent in other Southern states is a matter of interesting inquiry.

North Carolina. — The original attempts at settlement by Raleigh in North Carolina were failures. The later settlements by a group of English nobles, under the leadership of Clarendon and Locke, were an effort to establish the feudal system with grants of large estates, and the English manor system was projected in the woods and coast lands of Carolina. These settlements were only partially successful. The real settlement of North Carolina was chiefly by the overflow population of Virginia.

South Carolina. — In South Carolina the situation was different. French Huguenots, escaping persecution, and Puritans, like those of New England, made

up a large part of the early settlers. They soon established the city of Charleston. The cultivation of rice in the great swamps became almost as important as tobacco culture in Virginia. Large rice plantations were laid out, but, the swamps being too hot and unhealthy for white people, most of the planters had their residences in Charleston. Negro slaves were found to be extremely serviceable in the rice swamps and were bought from the slave traders in large numbers. It was not long before three fourths of the population of South Carolina were black slaves. Moreover, slavery took on a harsher form in South Carolina than in Virginia because slaves did not live so much in white families as trusted domestics but on the rice plantations under the control of overseers and slave-driving taskmasters. There existed a fear and dread of negro insurrection in South Carolina, and this was intensified by the uprising of blacks in 1740 when they were quickly suppressed by the superior discipline of the whites.

In Charleston itself there was much wealth and social refinement. The whole life of the Colony centered in this one spot. There was much social gayety, a good theatre, schools, and a progressive spirit. The contact with England was closer than in Virginia, and Charleston was more liberal and more directly influenced by Europe than even Boston and Philadelphia.

In spite of striking differences between the character of the early settlers in Virginia and South Carolina, they were much alike in establishing great plantations with an exclusive class of rich landowners and a

great body of black slaves as the basis of the labor system.

Georgia, under the guidance of the noble Oglethorpe, tried to establish a free democratic state, but, after a short struggle to keep out slavery and rum, both were freely admitted and Georgia submitted to the plantation and slave system coming in the South.

Cotton, rice, and sugar plantations. — In the development of the Southern States during the Colonial period and later, the general conditions were favorable on the whole to the growth of large estates and a slave system of labor. With the introduction of cotton culture on a large scale, cotton plantations with black labor spread over the Carolinas, Georgia, Alabama, and Mississippi. Great staple products, easily raised by slave labor, such as tobacco, cotton, and rice, were all alike favorable to the growth of the plantation style of society and its attendant institutions. Eventually along the banks of the Mississippi in Louisiana, and even in Texas, the plantation lord was seen enjoying his patriarchal rights over broad acres, directing his overseers in ruling groups of black field hands and dwelling in his mansion house as a sort of lordly proprietor.

Massachusetts and the township settlements. — In Massachusetts the division of lands among the early settlers was based upon township grants. The people who settled together in a village were given the right to own and control a township of surrounding land, and they divided up this district among themselves in such way as pleased them.

The Puritans in England about 1628 were badly

treated by Charles I, the king, and many of them decided to come to America where they hoped to enjoy religious freedom. In 1630 and for several years after many shiploads of Puritans came to the neighborhood of Boston and sought places for settlement.

They usually settled by congregations under the leadership of a pastor. An English pastor and a number of families of his congregation (a hundred persons or more) would sell their homes in England and take ship for Massachusetts. Upon arriving in Boston they would request from the Governor and Council at Boston a tract of land where they could settle together, build a village, divide up the land, and manage their own affairs.

Cambridge settlement and the town meeting. — An example of this was the settlement at Newtown, now called Cambridge. The land granted to this congregation lay along the north bank of the Charles River and covered several square miles. In locating the village three streets were laid out running north from the river, and two other streets, crossing these and running parallel to the river. Leading men in the settlement, chosen by the voters, made the selection of the site, laid out the streets, and then proceeded to make allotments of town lots, or home lots, for each family.

"The settlement of a town normally began with the laying out of the village plot and the assignment of home lots. This, to an extent, determined the location of highways, of the village common, and of some of the outlying fields. On or near the common the church was built, and, in not a few cases, the site that was chosen for this building went far toward determin-

ing the entire layout of the town. The idea of a home lot was a plot of ground for a dwelling house and out-buildings, for a dooryard and a garden, and usually an enclosure for feeding cattle and raising corn.

"In Salem, at the beginning, the home lots appear to have contained two acres each. Somewhat later they were reduced to one acre. Some of the home lots at Cambridge (Newtown) were as small as a quarter of an acre." — (Osgood, *The American Colonies in the 17th Century*, Vol. I, Chapter Eleven.)

At Cambridge the land that could be used for cultivation lay to the north, east, and west of the town. There were extensive marshes along the river and to the east and west. The land belonging to the town was divided into several different fields or tracts for different uses. Near the village lay the "cow common," the "pine swamp field," the "ox pasture," the "planting field," the "little neck." Further away lay the great marshes, the "west field" adjoining the great swamp, and the more remote pastures for stock, and the woodlands.

At first these large fields, pastures, and woodlands were held and used in common, but gradually allotments were made to the different families in the various fields so that the head of a family would own small strips of land in half a dozen or more fields.

"The settlers made use of the upland for home lots and planting fields. The meadow was generally used for hay and pasture. From the marshes and swamps hay and thatch were procured. In the remote uncleared or partially cleared tracts, swine, sheep, and young cattle were pastured. Oxen, horses, and milch

cows were pastured upon land nearer the village. That part of the cattle which were daily driven to and from their pasture occupied the chief attention of the town herdsman. In the autumn, after the hay and other crops had been gathered, the cattle were admitted to the meadows and upland fields." (Osgood.)

When a congregation had once settled upon such a township of land or grant from the General Court, and a village with allotments in town and fields had been made, the people or settlers were left free to manage their own local affairs in the town meeting. The men of the settlement came together at the church for a town meeting, elected a chairman or moderator, passed laws regulating their town affairs, elected a committee of selectmen, and magistrates as they were needed.

In this town meeting many matters of interest to the village and township were taken up, freely discussed, and decisions made by majority vote. Besides allotments of land they settled also the salaries and duties of herdsman, the building and repair of roads and bridges, the laying of taxes, arrangements for schools and schoolmasters, the building of forts and palisades for defense, the election of selectmen and local officers, the construction of churches and other public buildings, the regulation of timber and forests, the duties and expenses of militia companies, the duties of servants and apprentices to their masters, attendance upon church service, and even dress and manners of the people. Each town, at its yearly town meeting, elected also two men to represent the town in the General Court or Legislature which met at Boston to make laws for the entire colony of Massachusetts.

The town meeting was very democratic, and the common man was free to discuss proposed laws and to vote on an equality with the best. While some men had more ability, education, and wealth than others, nearly all were farmers, and not any were very rich, and very few were poor. In all the important affairs of life, the people ruled themselves and became intelligent and independent in discussing public affairs.

Each man worked on his own land, built his own house with the help of his sons, and the mother and daughter did the work in the home.

A free school was required in every town, and nearly all children learned to read the Bible, write, and cipher.

Coming of the Puritans. — About 1630 the Puritans from England began to reach Massachusetts in large numbers. Soon nine towns were settled about Boston. At first the congregations settled on the peninsulas along the coast. But soon they began to select tracts inland for towns, and it was not long before Thomas Hooker, a clergyman, led a company across the country and through the woods to the Connecticut Valley (1635).

Thus the towns grew rapidly and spread along the coast and westward. Each town elected two delegates as members of the General Court or Legislature of the Colony which made laws for all the towns and people of Massachusetts.

The Legislature or General Court. — Many important matters must be looked after by the Governor and Legislature of the Colony: difficulties with the Indians, shipping and trade with other colonies,

disputes between the towns, the laws regulating schools and colleges, the choice of a governor and judges of the courts, the important relations of Massachusetts to England and the English Government, the conduct of wars, the regulations for the militia, the building of forts, and many other things. But the General Court itself was mostly made up of delegates from the towns, and these were farmers and common men, not rich landowners as in Virginia. The governors and a few leading men in Boston were men of college education and wealth, but the great majority of the Puritans in the towns and in the Legislature were intelligent, independent workingmen of the common people.

Comparison of Virginia with Massachusetts. — A comparison of Virginia with Massachusetts with respect to the land system of the two colonies, the slave plantation in Virginia and the free towns in Massachusetts, will show a striking contrast. In Massachusetts, Boston and the towns generally are the centers of influence and of historic interest. The free school developed strongly from the start in the towns with their concentration of people and in the villages with small near-by farms. Slavery originally prevailed in Massachusetts; but as the soil was unfavorable, there was little use for slaves on the small farms, and even from New England kitchens they disappeared. Agriculture in Massachusetts, with its small estates and poor soil, reached as high a state as the conditions would permit. There never developed in New England a distinct class of poor whites, although some redemptioners were sent there. In New England there early developed a variety of industries, such as farming,

fishing, shipbuilding, lumbering, and the carrying trade on the ocean. As soon as the chance offered, before and after the Revolution, manufactures sprang up and flourished. While there was a pronounced aristocratic leadership in Massachusetts' society from the start, democracy was also strong and grew stronger, securing the commanding influence of the great middle class.

The ideal of life on the plantation. — Again it must be confessed that the one ideal of life which was seen illustrated in the best Southern planters was a marvelously attractive one. It seemed to combine the best elements of old English feudalism as seen in the country life of an English gentleman with the boundless richness and freedom of the New World forests. In Virginia and throughout the South it turned out a remarkable succession of leaders in state affairs. If this system could have been developed as it was originally planned and begun in Maryland, with a body of free, self-governing tenants on each manor, it might have produced a strong and permanent form of society throughout the South. But unfortunately slavery took the place of a free tenantry, struck its roots deep into the plantation life, and grew into a vital connection with it. But this ideal of the planter's life became the strong unifying and controlling motive of the civilization of the South.

On the other hand, the Massachusetts land system, with its town democracy, with its public schools and churches, with its cities and growth of manufactures, spread over the whole of New England and later passed over to New York, Ohio, and the Western states.

In comparing Virginia with Massachusetts we may

say we have a great contrast in the land and labor systems — an aristocracy and a democracy.

A full picture. — In the above treatment of the Virginia Plantation a pronounced effort is made to exhibit plantation life in a complete picture of its ongoing activities, centered around the great home house with its aristocratic family traditions and leadership. It is a pronounced exhibit of patriarchal home-and-family life. In the second stage of treatment it expands into a social and political system that spread its influence and its organizing principle throughout the Southern States and dominated the South for two hundred years.

The above treatment inadequate. — And yet, elaborate as this treatment is — in comparison with the usual textbook's meager handling of this topic — it is still noticeably inadequate. In dealing with this topic in the classroom it will be helpful to expand it with plantation maps and pictures and with contemporary descriptions from old letters and diaries (source materials). The imagination with its constructive power must be appealed to until we can forget the present and live over again this plantation life. It is not merely that we reconstruct this image of those times and gather its forces around a center of influence, but the very spirit of that age should animate the picture. Worked up into its complete form it might be called a dramatization of plantation life. It demands much time and space and especially artistic spirit in grouping and combining of elements in the picture. To some extent the teacher can make up this deficiency by enlisting the enterprising spirit of the children in working out some of the projects

belonging properly to plantation life, as making a loom for weaving coarse textiles, the construction of a fireplace with its equipment, the making and wearing of Colonial costumes, and especially the working out of a plan of the old Colonial mansion as seen at Mt. Vernon, at Arlington, and elsewhere.

Map making and other projects. — One of the most appropriate projects for each child in the class is to make a map to the scale of a five thousand-acre plantation, locating the home house and showing the arrangement of other buildings, the division into farms under overseers, and the distribution into fields for cultivation, forests, and pasture lands. Later a complete map of the village and township division and distribution of lands in a Massachusetts settlement should be prepared by the children, representing the village streets, church, common, school, private-home lots, fields, forests, swamps, stockade, and roads, with the township boundaries. Children should be encouraged to collect and mount pictures, make illustrative maps, and prepare an exhibit of well-arranged materials showing the interesting features of the Southern plantation and later of the Massachusetts town-meeting plan of living.

All this machinery of graphic presentation and of constructive activity is designed to bring into full consciousness one single central idea in its complete life environment. This idea is to find its clear demonstration in one powerful concentrated object lesson. This is what we mean by the first stage in the development of a project — its concrete embodiment in a convincing example.

The stage of expansion. — When a child is once grounded in this sort of genuine, realistic knowledge of a subject, he is well prepared for the next step in thinking. Having thoroughly mastered this fundamental idea in a limited, single life setting, he is prepared to expand it and apply it successfully to other fields of experience. For there are plenty of kindred fields where it is the main principle of interpretation. The Virginia Plantation idea grows strong at home and expands under modified conditions throughout the Southern States. It shows itself in a different form in Maryland, New York, and Pennsylvania, while in Massachusetts the social and economic organization based upon a different land system produces a distinct contrast.

Comparison, a serious thought process. — This process of expanding the idea and of enlarging its scope by varied applications leads to a series of *comparisons*. The business of making comparisons along fundamental channels of thought, on the basis of full knowledge of the things compared, is a very serious matter in education. It strikes pretty close to the hub and center of right thinking. It is a process of measuring with standard units and of weighing out values. When we arrive at the threshold of this serious act of making valid comparisons and conclusions, we may look back and realize the supreme value of the work that has preceded in the first stage. We were then developing into a full concrete demonstration the basal unit of measure with which, as a standard instrument, we make the measurements and determine values.

Three phases of comparison. — In the handling of the Virginia Plantation the opportunity for making

valid comparisons is offered on three occasions. First, the head-rights system of the Virginia Company is compared with a similar plan in vogue with Lord Baltimore in Maryland and the patroon estates in the New York Colony. Second, there is a comparison of the Virginia Plantation with a similar system of land-ownership in the Carolinas, Georgia, and all the Southern territories until it grew into a landed aristocracy for the whole South. Third, there is a full and extended comparison of the Virginia Plantation with the town-meeting land system of Massachusetts and New England. This last comparison leads to a striking contrast and exhibits two opposite systems of land tenure and of social organization. On the basis of these contrasted land systems and the social order built upon them, two civilizations developed in this country and ran parallel. In spite of common elements the differences were so great that they drifted into serious and later into bitter conflict.

Two ideas. — At the end of this journey in the historical field we may look back and see that in early Colonial times two basal ideas were deeply planted, one in Virginia and one in Massachusetts, which were destined to a long and powerful development. These two ideas, embodied in the fundamental social order, shaped American history to a large degree for more than two hundred years. To bring out the full force of these two ideas requires an elaborate treatment in what we call a large teaching unit, or project.

The second stage of expanding the topic into its larger dimensions is seen to be less elaborately worked out than the first or concrete, descriptive stage. The

comparisons are suggested rather than executed in detail. The conclusions arrived at should be the result of a child's own reasonings and should not be imposed. While in the printed matter the discussion of the second stage is more condensed and brief, in the classroom instruction the time required may be equally great.

Self-activity in reasoning. — It is perhaps impossible to describe in detail or at least to foretell exactly what course this process of thinking should take, this measuring activity based on comparison and inference. This is the point where, on the basis of material previously offered, the student should be thrown upon his own resources and held to account for conclusions drawn. The business of the teacher is largely to see that all the data are at hand, that important considerations are not overlooked. He is to be rather an observer and critic of the students' reasoning processes.

The use of sources and of extended reasoning. — In this second stage, even in the elaborate treatment of the topic, the book will furnish little more than the data for suggested lines of reasoning. A fuller knowledge upon which reasoning is to be based may be sought for in readings and reference books. It is indeed of fundamental importance that this reasoning on the basis of comparison, seeing similarities and contrasts, forming analogies and drawing conclusions, should not be neglected or treated in any scant fashion. It is in this way chiefly that the learner finds out how to use his knowledge, how to test its value, how to organize it more strongly in its basal sequences. This is in fact the main stage of organization — of serious thinking.

It will bear repetition at this point that these two stages in the process of thinking are both commonly neglected: first, the elaborately constructed object lesson as the strong embodiment of an idea; second, the expansion of this idea through comparison to reasoned conclusions showing its larger scope. We have thrown the whole weight of our argument upon the enlargement and intensification of these two stages. Out of this conviction springs the demand for the enlarged unit of study which lays a solid foundation for a well thought-out organization of knowledge. The Virginia Plantation honestly and thoroughly mastered as an important center of organized knowledge is believed to be worth more than any amount of mere facts and knowledge frailties.

QUESTIONS AND PROJECTS

1. To what extent is the description of the land system of early Virginia and of the other colonies a proper introduction to the plantation project?

2. In how many different ways were lands distributed or sold in the various colonies as a means of encouraging settlement?

3. This chapter furnishes a description of the Virginia Plantation, its mode of life, and its manner of conducting plantation enterprises. In the classroom this would naturally resolve itself into a series of projects in plantation management. These may be suggested as follows:

a. As a prospective planter looking for a site upon which to locate such a plantation of about 5,000 acres, what would be your main considerations?

b. After having selected the site for such a plantation make a survey of it and construct a map showing the location of the home house, slave quarters, overseers' houses, fields, stables, pastures, woods, etc.

c. Let each child make a map on a simple scale showing the general plan and layout of the whole plantation; the division of

the entire estate into separate farms for management purposes would require another map.

d. The planning of roads, bridges, gates, fences, and highways to neighboring plantations.

e. The training of slaves in skill and efficiency as carpenters, blacksmiths, coopers, tanners, weavers, etc.

f. The arrangement and conduct of domestic affairs in the household and the control of house servants.

g. Care of the home garden and orchard and assignment of gardens to overseers' families and to the slave households.

h. Providing lumber for the construction and upkeep of houses, stables, carpenter and cooper shops, fencing, tobacco sheds, etc.

i. The raising and curing of tobacco and the storing and later shipment of grain and tobacco. Also the keeping of accounts with the British merchants at Bristol or London.

j. The general supervision of spinners and weavers by the matron of the household.

k. The general supervision of plantation workers and provision for slaves in health and in sickness.

l. Care and breeding of thoroughbred stock, such as cattle and horses, sheep and hogs.

m. The slaughtering of cattle and hogs, and the smoking, curing, and packing of meats in the fall; also the tanning of the hides for various uses.

n. The entertainment of guests and visitors from more distant plantations.

o. The ordering of a bill of necessities and luxuries from the British agent in England.

4. Observe the effects of the plantation system of labor and of social life upon the character of the planter and his family.

5. Observe the effects of the plantation system upon the economic development of the South.

6. The contrast with the land and labor system as it developed in the North is of marked significance.

CHAPTER VI

THE GERMINATION AND GROWTH OF IDEAS IN LARGE UNITS OF STUDY

The analogy of plant growth. — The conditions under which ideas spring into life and wax strong have called forth the best reflective thought of educators. Since the days of Comenius and probably long before, the resemblance of ideas to plants in the growing process has been noted and enforced. This analogy suggests the two steps in the process of thinking, the genesis or germination of ideas and their later growth and cultivation. The analogy of plant growth suggests further that ideational activity is a continuous process of development. An idea is not a static condition or product, but a thought movement based on a transmission of nervous energy. Our recent psychology is a psychology of movement, of pathways of nervous effort, corresponding to ideo-motor action. Thought getting is not the bodily transfer of ideas to the memory for storage — not a static collection, but it is an active fusion of old and new trains of thought by assimilation. In learning the mind forges into new realms, holding fast to its old ideas as magnets with which to attract and interpret the new, and *vice versa*.

In considering the conditions under which ideas spring up and grow during the school period, we may take for granted the early development of sensation

and perception, of imagination, of reason and will as treated in the psychologies. This assumption being made, how do children apply themselves to the acquisition and further expansion of their ideas? In their studies children are regularly confronted with new situations, new projects which are more or less difficult to interpret. In fact it is the business of the school to bring on these difficulties in an orderly series and to introduce the strangers one after another. Let it further be granted that we have been fortunate in the selection of the main ideas in each study. So we are face to face with this problem of the genesis and development of such thoughts in the child's mind.

The parable of the mustard seed is the unapproachable illustration of this process: "Another parable put he forth unto them, saying, The kingdom of heaven is like to a grain of mustard seed which a man took and sowed in his field, which indeed is the least of all seeds; but when it is grown it is the greatest among herbs and becometh a tree, so that the birds of the air come and lodge in the branches thereof." By the use of this analogy Jesus was planting the idea of the new kingdom in the minds of his disciples.

Conditions for germination and growth. — The chief business of the teacher is to plant and cultivate ideas in the minds of children. Under favorable conditions they will germinate and spring into conscious life. What are these conditions?

The gardener who wants a good crop pays careful attention to the selection of his seeds and to the right soil conditions, to warmth and moisture at the planting time. The teacher has a similar program to follow

in the cultivation of ideas: first, a careful choice of those potential ideas most worth cultivating; second, a study of the mental conditions under which ideas germinate; and, third, wise cultivation. Those seeds in gardens which fail to sprout and grow are a measure of wasted effort. In the same way those ideas which do not germinate in the mind are dead and worse than useless. In teaching there may be much greater relative waste than in gardening.

Growth is the chief thing. — But the one indispensable thing in both cases is spontaneous, healthy life and growth. Every idea, like a young oak, must grow or perish. How many so-called ideas are planted in children's minds which lack this one essential — the life energy! One acorn sprouting into life is worth a thousand or a million rotting in the ground without sending up a shoot. A single idea actually opening up and expanding in one human mind is a potential force and may change the history of the world. In fact it has so happened many and many a time. A million ideas stillborn fade into nothing. How to get a few of the best ideas to growing naturally in a child's mind is the thing of chief import in education. Other things are important and necessary, but this is pre-eminently the chief thing.

Ideas like tender plants. — To provide all the conditions favorable to the planting and growth of ideas in children's minds is a serious task because it is so easy to neglect or overlook one or more of the essentials. Going back to our analogy, observe that seeds do not thrive, do not even sprout in a dry soil. If one important condition is lacking, all the others are

rendered useless. In the western United States are millions of acres of good land, fertile soil, warm sunlight, with only one condition lacking — moisture. The result is a desert. A teacher may possess three essential qualities, and absence of the fourth nullifies the whole. The time for extreme care is the period when seeds are germinating and, a little later, when plants are young and tender. Young ideas too are tender plants and sensitive to environment. They shrivel up at the touch of harsh and unfriendly conditions. Ideas are easily frosted and killed, especially the best ones. They are very delicate plants. They must have a favoring, friendly, almost motherly atmosphere. Imagine, if you can, a harsh, severe teacher guiding a reading class through *A Christmas Carol* or *The King of the Golden River* or *Evangeline* or the *Twenty-third Psalm*. It is unthinkable. But even where the higher sentiments are not involved, all the conditions favorable to a full, wholesome mental awakening must be taken into account.

The planting of one organizing idea a great achievement. — The planting of one productive, organizing idea in the mind of a child so that it shoots up into a vigorous growth is a notable and worthy achievement. It is not a piece of routine work like learning an addition table or the rote memorizing of a poem. To preside over the planting and germination of one fruitful idea in a child's mind is a high point of superiority in a first-class teacher. It is the complete initiation of a thought movement destined to develop and organize experiences through life. One strong, good idea rooted in a child's mind and well started on its proper

career sets the standard toward which all best things tend. A real nucleus has been formed around which to organize and develop a life purpose. It is the vital, essential thing in instruction, and every term in school should see a few such important things happen, a few life centers established around which knowledge has begun to organize, and a thought movement initiated which is to go on.

A child is fortunate who can find one teacher in a single study who can give him this kind of start in his thinking. The strength and quality of this sort of thought, once originated in any study, tend to spread outward into other studies and forward into life. It is a sad experience for any child to go through school without having discovered a single one of these fountains of knowledge which pours out its treasures in an endless stream. We have one very good example which is precisely to the point. At the close of his remarkable conversation with the woman at the well, Jesus said, "But whosoever drinketh of the water that I shall give him shall never thirst; but the water that I shall give him shall be in him a well of water springing up into everlasting life." In the best sense teachers wish to open up fountains of living thought which are perennial and inexhaustible. For such is the nature of the best ideas operating in their full strength.

One idea of large and growing importance in the life of the people is the improvement of city life by the introduction of sanitary and beautifying conditions. The remarkable era of reconstruction of Vienna after 1858 by which a dirty, unhealthful, medieval city was completely overhauled in the interest of modern

sanitary and social science may serve to illustrate our theme — the conditions for the germination of strong ideas in the mind.

Illustration of Vienna. — Vienna was up to 1858 one of the worst-conditioned capitals of Europe. It consisted of about 600,000 people crowded into a square mile of territory and hemmed in by a heavy medieval wall, moat, and glacis. The streets were narrow, crooked, and dirty. There was no satisfactory water and sewage system. Pestilence prevailed, and the death rate was very high, about forty-two to the thousand yearly. People were crowded into damp cellars and small garrets. With a rapidly growing population there was no chance for expansion because of the mighty encircling wall. The villages that had sprung up outside of the city were wretched suburbs without proper plan or street connection with the city.

This was the condition of Vienna during the early years of the rule of Francis Joseph. An idea came to the young king, and under his enlightened leadership a royal commission of trained engineers, sanitary experts, and architects was organized which in a few years worked out a comprehensive plan for enlarging and rebuilding the city, 1848–57. It was the idea of a complete reconstruction of the city of Vienna.

The wall, ditch, and a considerable strip of land beyond them and encircling the city were public property. Under the lead of Francis Joseph the royal commission decided to level the great wall, to fill up the ditch, and, taking advantage of this broad circle of free territory which in area was almost equal to that

of the inner city, to work out a magnificent scheme of public improvement.

Beginning in 1858 three years were employed in demolishing the useless medieval walls and in leveling and clearing the space. In the meantime a complete scheme for rebuilding and beautifying the city had been planned with the idea of converting this cleared zone into a great circle of parks and boulevards with broad and commanding spaces for imposing national buildings in a proper setting of lawns, shrubbery, and trees. One broad circling boulevard passing through the middle of this cleared zone and completely girdling the old city formed the basis for the reconstruction of the street plan of the enlarged capital. The noble Ringstrasse, from one hundred fifty to two hundred feet wide, with its adjacent pleasure grounds and its remarkable series of public buildings, was thus the outward result of this broad-minded effort to rebuild and modernize a great city. The expansion of the city beyond the Ringstrasse along the line of broad avenues radiating outward from it brought into existence the much larger modern city of Vienna.

At the same time, in the interest of improved sanitary and other requirements, the old inner city was remodeled, its narrow streets straightened and widened, and broad connecting thoroughfares opened up. This involved a large destruction of old buildings and reconstruction on a superior plan. Improved city housing with abandonment of cellars and garrets was aimed at. These improvements of the street plan of the city were attended with wholesale and costly betterments in sanitary and municipal equipments. A complete and

adequate water system was projected with a great aqueduct which brought pure mountain water from the Alps, eighty miles distant, and distributed it through water mains arranged according to the new street plan. A reorganization and extension of the sewer system was provided, and a great trunk sewer was built which collected and carried the waste and sewage of the city into the Danube several miles below. The construction of extensive public markets and abattoirs, or slaughterhouses, for the inspection and supervision of food supplies further contributed to more sanitary modes of living. At the same time was undertaken the construction, at liberal expense, of new and ample school buildings, and a complete system of popular education for all classes was worked out.

These municipal betterments, especially those of a sanitary character, greatly improved the health conditions in the city and reduced correspondingly the death rate. This means the saving of the lives of many thousands of people each year by improved sanitary conditions in one city alone. In the end, for the enlarged city, this meant twenty lives were saved each year for every thousand of the population owing to the improved sanitary conditions, or forty thousand lives in all, yearly.

The idea of rebuilding Vienna, thus briefly described, merely illustrates what has taken place during the last fifty years not only in Vienna but in Berlin, in Budapesth, in Glasgow, in Naples, and in nearly all the large European cities. Our American cities have also had the same problems to deal with, and even smaller cities and towns must make provision for pure water,

for sewage disposal, for street improvement, hospitals, parks, and public buildings. The problem is much the same for all cities and towns the world over.

How to lodge ideas in the mind. — It will be allowed that the one idea of city improvement as illustrated by Vienna, on account of its universal importance to the welfare of the people in all cities and towns, deserves to be thoroughly appreciated by children. Nor is it a matter of mere information but of clear and strong conviction as to what must be done if society is to protect itself. How is such a convincing idea to germinate and get a strong initial growth in the mind? If one wished to influence a city council or a body of citizens to take action in a similar case of city improvement, how could one bring this idea home to them in such a way as to be conclusively convincing? How may an idea find lodgment in a child's mind so that it will take deep root and, like a living shoot grafted into an apple tree, take up into itself the full strength of the mind into which it has been grafted? It seems apparent that an adequate description of the whole situation, the idea in its full life setting, is necessary before the mind can render to itself any judgment. The more complete the demonstration of an idea in all its essential, concrete relations, the more convincing is its effect. An idea clearly seen in its main bearings in some concrete illustration is overwhelming as a demonstration of truth. Whether an idea takes root in the mind or not depends upon whether the mind itself is converted into a soil and an environment in which this idea can take deep hold. Ideas do not sprout in an empty mind or in a vacuum. Somehow

a fertile, receptive, and favoring mental environment must be supplied, else ideas can get no living hold.

The generative environment for an idea. — The presumption is that in approaching some new problem the learning mind is not in full possession of the body of facts and relations upon which its meaning rests. At any rate it is necessary to bring together old facts and new and to combine them into a complete setting favorable to the hearty reception of the new idea. In other words it is necessary to build up a soil and to create an environment in which an idea may germinate. Any idea important enough to command our attention rests upon a complex combination of facts so grouped as to throw this idea clearly into prominence. For the time being it gains a complete monopoly of attention and interest. It is difficult to see how this idea can come into existence or can be recognized in its true value except as it emerges into view as naturally springing out of this complex generative environment.

No short cut to ideas. — One conclusion that may be drawn from such considerations is that there is no abbreviated or short process for propagating ideas in the mind. Just as good seeds require soil and warmth and moisture and favoring protection and adequate time for natural germination, so with ideas. The process can not be hastened without serious damage. All our impatience for quick results must stop short out of respect for the mind's natural and rightful modes of action. It is both presumptuous and stupid to try to force nature. And yet, in spite of this warning, the short-cut method, the bobtailed process of giving chil-

dren condensed, generalized statements as substitutes for ideas is common practice among teachers. It is a common folly. An idea thus shorn of its vital relations and trimmed down to the brief dimensions of a formal textbook statement is like a bird stripped of feathers, helpless, ugly, and out of all relation to life. This effort to strip ideas of their proper and decent clothing deserves to be harshly punished because it is an unwitting crime against childhood. An idea must be well-feathered, else it will remain unfledged and never get out of the nest. These full-fledged ideas are the messengers of the mind which function in the world. They arouse and strengthen the child's own potential energies.

The controlling ideas are few.—The number of important ideas in one study and in all studies is not so great but that we can well afford to grant ample time and circumstance for their complete natural germination. Otherwise education is a fraud. There is no ground for haste or anxiety lest children may not compass a prescribed quantity of knowledge. Ideas are not quantitative and can not be scored on that basis. The leading ideas are far too important to be measured on quantitative standards.

If then these ideas are so all-important and if we can afford to give them all the time necessary to their complete germination and growth, the question how to provide these conditions becomes the significant problem. What are these conditions? Let us say it over again:

An idea, like a plant, requires a favorable habitat, that is, a complete environment that provides for its

germination and continuous growth. In order to raise a banana tree in our Northern climate, we must create in the plant house the conditions of soil and moisture, of warmth and sunshine corresponding to the tropics. Every idea requires for its nourishment and complete growth a peculiar and appropriate habitat. If this point of view is correct, that a single idea is important enough to set the teacher to the serious task of creating a special environment in which it can grow and thrive, he may get a new and surprising notion of what teaching is. The plant house is an elaborate and expensive luxury. It requires much intelligence, labor, and expense to provide it. If the teacher is called upon to expend a corresponding amount of thought and effort in housing one idea or in getting children to house it, he has, to say the least, a highly enterprising and extensive task. At first view this may appear as an unheard-of, a preposterous extension of the teacher's problem. It is certainly no trifle. On the other hand it may suggest the simplest way for getting the result at which we aim. We fall back here upon our main proposition. A few big, full topics are better than a host of cramped and undeveloped ones. A few important ideas organize and simplify the whole field of knowledge. We are beginning to see that big ideas demand the major part of our attention and effort in school studies. In literature, such as we use in the schools, this conclusion is now acknowledged in its full breadth. Our best writers, like Scott and Hawthorne, require a whole book or story in which to create the full environment for a single idea, as *Ivanhoe*, *The Scarlet Letter*, and *The Great Stone Face*.

The home idea. — We are now called upon to readjust our mental vision, to expand our thoughts to the comprehensive meaning of the big *unit of study* as the embodiment of an idea. If we desire, for example, to cultivate in children a full appreciation of the modern dwelling house as an ideal home for the family, how should we go about the task? I fear that certain of us, as schoolmasters, would sum it up in one brief sentence and describe it thus: "It is a building of nine rooms with living room, dining room, kitchen, bathroom, sleeping rooms and sun parlor, basement and garret, with furnace heat, all modern improvements, and favorably located." This is the condensed real estate formula for the description of a house, and such condensations are now the vogue. But the home idea is something totally different from this blunt, trite phraseology of the real estate agent. Even a palace gorgeously described might well miss the whole point. We can approach this idea through several different studies and allow it thus to develop gradually to its full, generous meaning. It may begin early in a fairy tale like *Beauty and the Beast* or the Bible story of Samuel or Hawthorne's story, *The Great Stone Face*. In the home geography of the third or fourth grade, it may further develop one of its phases in lessons on house construction. From time to time the children may be taken to see and observe closely a house in process of building. They watch the basement excavation, the walls, and drainage with the relation to water main and sewer, if in town. The floor plans of the architect or contractor may be examined and discussed in class with reference to good arrangement and wise

provision for family use. The rough framework of the beginning structure is of particular interest. The corner posts, joists, beams, and supports reveal the strong skeleton of the structure. While the building is in this preliminary stage of construction, they may observe the arrangements for water and steam pipes, the ventilating shafts, the electric wiring, the soil pipe and plumbing, the gas pipes, the chimneys, the positions of doors and windows. The special conveniences are noted for pantry and kitchen arrangements, the toilets, the closets for clothing, and the use of waste room for storage. A later visit will give opportunity to study the interior finish of millwork in doors, panels, floors, mantels, stairways, the carved woodwork; the painting, filling, and varnishing of woods, the decoration of walls, the tinting and color scheme of rooms. Finally the equipment of rooms with furniture, books, pictures, curtains, piano, and other home needs and conveniences for use or entertainment or ornament helps to express the real meaning of the home idea, at least this aspect of the house and its equipment. All these worked out in their proper relations and judged from the standpoint of the original plan are means of giving children a more or less adequate sense of the things needful for the standard house as a home. Even the yard with its grass plots and shady nooks is worthy of careful thought. The home garden also with its vegetables and fruits for use in the home and the labors connected with the care and cultivation, the storage and preparation of the same are a part of this home. The chicken house and barn may demand the same consideration.

What a variety of materials, of tools and processes, and of skilled workmen drawn from distant places must work together to produce what we call a convenient and complete home!

Again an observation of this house in relation to the city water supply, to the gas main, to the electric circuits, to sewage disposal, to street paving and good roads, to electric cars and stations, to markets and schools and churches brings to mind a whole group of important questions, social, industrial, and educational. Also sanitary and health problems are broached which bring out clearly the intimate relation of this home to the larger community.

The idea of what the home and its environment ought to be does not spring up in a moment or out of one short sentence or definition. It is an idea that comes to life with the growth of a natural experience, the opening up of a complete environment, and this only gradually brought to consciousness. It is full of experiences that should be keenly felt and fully appreciated because they lie at the basis of all studies. The idea is too important and fundamental to allow hasty or barren treatment. In fact what is thus far suggested is merely the beginning of a much richer development of thought. We need to draw upon poetry and music and biography and social life to give this home idea its true meaning. Biography and literature are full of the home idea, *A Christmas Carol*, *Snow-bound*, *The Cotter's Saturday Night*, *My Ain Fireside*, and many others.

It would be an achievement of no small concern to society if every child in the school should grow by

degrees into a sensible and convincing respect for the home as it ought to be, for the standards of home living regarding comfort, convenience, and sanitation, touching also the home relations and family affections, that is, the better spirit of the home as exemplified for example in *Snow-bound*. The ideal is the home in the "house beautiful."

In summing up this suggested treatment of the *home idea* we may say that it is the function of the school to produce an environment of home experience and of home ideals in which this concept of home may come to life and flourish.

The original productive environment of an idea. — If we go back to the situation in which an important idea originated, the historical conditions out of which it first emerged into prominence, we shall find its vivid and full explanation. In other words a given set of conditions necessarily gives birth to an idea. The idea of self-government in the town meeting sprang up in the early settlements of New England as a natural outgrowth of those conditions. Its appearance at that time was almost spontaneous. If we desire to have children understand this idea of self-government, describe with elaborate fulness the town-meeting life and the pioneer Puritan's method of managing his local affairs. This concept will be seen coming forth of necessity, showing itself clearly as the key to the solution of his problems. The invention of the cotton gin came at the nick of time, just as the conditions were ripe for it. Give this environment and the conjunction of causes producing it, and you have the idea in its real essence. Our American Revolution and the

idea of freedom that centered in it arose out of conditions that inevitably produced it. The first mowers and reapers followed closely the expansion of our agriculture over the broad fields of Illinois and the West when the old method of scythe and cradle no longer satisfied the enlarged Western conditions. The pressing need for closer and stronger union of the thirteen colonies in 1787 was so keenly felt by the leading men that they found themselves under an imperative necessity of erecting a new state, a federated government.

Great ideas and institutions based upon them spring up under environments that naturally produce them. This suggests clearly that, if we wish certain ideas to spring up in the minds of children, we should reproduce in as vivid a form as possible the actual facts and conditions of the original environment from which they came. Transplant the children completely into that environment. It requires an elaborate effort of constructive imagination, building up complete life pictures out of abundant lifelike material. The historian who possesses the historical imagination, out of the fulness of his knowledge, is able to set these great pictures before us. This is exactly what the best historical novelist does or tries to do. *Ivanhoe* appears under feudal conditions on horseback, clad in armor with lance in rest or riding up to strike the ringing plate as a challenge to his Norman adversaries. The idea of feudal heroism demands that the knight be so accoutered and so surrounded. Under a different environment such a knight would be a meaningless and even ridiculous figure. Each idea has its appropriate

setting and, shorn of this setting, has no meaning or else a perverted and ridiculous meaning.

Dull verbal statements. — A mere statement of an idea stripped of its accessories and conditioning circumstances is verbal jargon. We are familiar with the expression, "Words, words, words." Take for illustration the following statements from two of our standard grammar-school texts in history: "The English idea of representative government signified representation of all classes of the community and not at all representation by population." The trained historian would understand this, but for the child it is necessary to give a full statement of the situation in England, showing how the right to vote was distributed and exercised. A second instance: "It was Thomas Jefferson, President of the United States from 1801-1809, whose sound democratic instincts and robust political philosophy prevented the Federal Government from becoming too closely allied with the interests of political classes and helped to make it what it should be — a government of the people, by the people, for the people." A student well versed in our history would have to think closely to grasp the full meaning of this sentence. It is doubtful whether a full chapter of illustrative political and biographical description would place a sufficient environment around this sentence to make it fully intelligible to an average school child. It requires time and circumstances and a picture-building imagination to clothe an idea with these vivid surroundings which reveal it in a clear life meaning.

Thus far in this chapter we have been discussing the germination and growth of ideas in their beginning

stage, when they first break forth into full meaning. The later development of these ideas as they go on expanding through the course of study is discussed further on. But this initial stage in the development of thought is of vast importance. It is the springtime of knowledge and it calls for a bounteous use of rich sensory and source materials.

Growth of the idea of representative government. — The original permanent stronghold of thought in any study is a group of simple but large ideas whose gradual mastery leads up to a broad survey and control of the whole study. In American history such a fundamental idea appears in the growth of the law-making power. Beginning in a small way in the earliest legislatures of the colonies, the idea of self-government through their own chosen representatives grew into a controlling influence backed by an overwhelming sentiment among the people in each colony. Under the Constitution this idea took on much larger proportions and broadened to meet the necessities of an enlarging population and territory. At the present time this idea is still powerfully operative in our state legislatures, in city councils, and in our National Congress and is one of the chief agencies for working out the solution of our political and social problems. At every stage of its growing influence this idea can be illustrated by striking typical examples advancing from the earlier simple forms to the later and more complex. A few such ideas, developing continuously through our history and properly interrelated, constitute the backbone of our historical study.

But a warning against misunderstanding is here

necessary. Not the final abstractions of mature scientific thinkers are here aimed at but the root ideas springing out of concrete experimental studies and pointing toward larger thought developments.

It is no small task to pick out these simple, central, and far-reaching truths. It can hardly be called unkind criticism of our textbooks and courses of study to say that they have not yet sufficiently isolated the few underlying, continuously developing ideas in each study from a burdensome mass of mere facts. If we can get at the main centers of thought in the right way, the secondary facts will easily find their proper places and meanings.

Ideas are standard measures. — This doubly sifted and rigidly selected thought material of the best studies is of supreme importance. The world's enduring wealth is treasured in these ideas. Other kinds of wealth perish in the using, but these social ideas and principles, thus far wrought out through ages of conflict, are a kind of wealth for which we have no adequate standards of measurement. They are themselves the standards upon which the worth of other things is measured. This increasing fund of ideas is the gift of one age to the next, but the manner in which this gift is handed over to the children is the important thing.

It is this hoarded treasury of imperishable thought that the teacher guards. It is also his stock in trade. It is an intangible asset not easily made manifest to the worldly-minded. Yet it is our main reliance. Select diamonds are valuable, but select ideas are invaluable. We could not afford to trade off the parable of the Good Samaritan for the greatest railroad system

with full equipment. Mrs. Browning's poem, *The Cry of the Children*, is a greater source of strength to England than a battleship.

The genuine school course is made up of the choice part of this best thought inheritance, and the teacher is not only the custodian of this treasure but the banker who puts it into circulation and provides for its widespread service. He transplants these ideas into the fresh soil of the oncoming youth, giving them a better chance than ever to grow into a full fruitage.

To pick out the few choice stories, ballads, and biographies, the lasting folk songs, hymns, and national tunes, the striking types of mountains, cities, and industries, the representative trees, plants, and insects; to arrange them into a well-ordered series for boys and girls — this is the problem of the curriculum.

When the selection and arrangement of this treasury of ideas has been wisely accomplished, the still greater task remains to find the teachers who are skilled "to bring forth from this treasure things new and old." Such at least is our ideal.

Forms and symbols. — But, alas, obstructions are thrust in between the teacher and his *program of ideas*. Other cares and duties preoccupy his mind and conceal his chief duty — to plant and to cultivate in children's minds the best ideas — to put every child in possession of his main inheritance of thought. The attention of children, likewise, is drawn away by other demands.

First, there is necessarily imposed upon children a mastery of the forms and symbols required to express knowledge. There are alphabets and primers, correct forms and usages in language, the irregularities and

eccentricities of English spelling, forms and movements in writing, figures and symbols of arithmetic, punctuation marks and their uses, diacritical signs used in dictionaries, notation in music, styles of letter writing and composition, customary drills in phonic sounds, and oral reading. These conventionalities with the repetitions, drills, and written tests necessary to their mastery and correct use demand a large share of time. They are often put first in school courses and are given the main consideration. They are necessary but may be overemphasized.

Nicety of skill. — In addition to a reasonable mastery of these necessary forms teachers are tempted to substitute for ideal education a set of schoolmasterish accomplishments in the superior control and expert use of these forms, such as excessive neatness and perfect style in writing, faultless diagrams of sentences, beautifully executed maps, skillful tool practice and execution in manual training, the perfect finish of a penrack, desk, or picture frame, marked ability to spell curious and unusual words, elaborate elocutionary drills, showy exhibits of pictures, drawings, or constructive work, finished up perhaps by the teacher. These favorite school arts easily gain the upper hand and even the monopoly of school effort. Neatly and handsomely done they are deemed worthy of great praise. But the schoolmaster should remember that the most beautiful illuminated manuscripts were made at a time when learning itself in the hands of the monks had reached an absolute standstill. People had stopped thinking.

Overdone these school arts produce mental stagnation whether of the individual or of the school. A

school system thus fossilized needs a reformer who will pour the new wine of expanding ideas into these cherished forms and shatter them. We can not pile up these formalities high enough and broad enough but that a single idea will explode the whole.

Education is based primarily not upon perfection of conventional forms or upon nicety of expert execution but upon the strength and vitality of the dominant ideas. Wherever powerful ideas take possession of a child's mind, these formalities are swallowed up in greater things. "The letter killeth, but the spirit maketh alive."

Materialism. — Another serious interference with the teacher's true work in the planting and culture of ideas is what may be called *didactic materialism*, that is, the devotion to materialistic, low-grade knowledge. Facts are measured out quantitatively, as it were, by the bushel or barrel or carload. The quality and worth of ideas can not be measured by such standards. We live in an age overshadowed by a dull, fact-cramming materialism, and our school work has taken on the dull spirit and color of its materialistic environment. The subject matter of the school course is gross, cumbersome, and complex. To the child it seems endless and impenetrable, and even to the teacher its quantity is confusing and distressing. The whole mass needs to be lightened and spiritualized. The predominance of a few great ideas would simplify and expose its inner structure and meaning.

A pious fraud. — There is a strong semblance of knowledge in our textbooks and many a teacher is deceived thereby. But this purely formal kind of knowl-

edge is half sham. The brief announcements of the book bear a bold front and appear to throw open the doorway of knowledge. But passing over this threshold we meet disappointment. We are practicing upon the children a sort of pious fraud. The show of knowledge is mostly in the flaming advertisement on the outside front. Our textbooks consist largely of these headlines and advertisements with a disappointing meagerness of real content. We find instead lists of facts, not full-fledged and expanding thoughts pricking the mind to action. They are mere collections of the epitaphs of knowledge rather than living and growing ideas. Our schoolbooks are heavy condensations, cyclopedias, indigestible chunks, names, or brief tabulated lists like the catalogue of a library. This is the mere external shell of knowledge. The important ideas lie concealed from the child in this mass of rubbish. The old familiar phrases are almost justified — such knowledge is like a needle in a haystack, a few grains of wheat in a bushel of chaff.

Dull commonplaces. — The following quotations from some of our standard texts illustrate the above statements.

1. "New England is almost entirely made up of strong rocks, like those forming the Appalachian Mountains. It has a diversified surface, but along the coast it is generally low, especially in the three southern states. This upland was once a peneplain, that is, it was worn down by the action of the atmosphere and the rivers almost to the level of the sea. Later it was elevated to its present position and the lowland became an upland."

2. "The imports of France are chiefly wool, raw silk, coal, cotton, and grain of which about one tenth in total value comes from the United States. Its exports are mainly silk and woolen manufactures and wine of which the United Kingdom, Belgium, and Germany receive the greater part."

3. "Moscow, another residence of the Czar, is but little smaller than St. Petersburg. Warsaw is a city larger than Boston and is an important center of manufacture and trade. Odessa is a flourishing modern city somewhat larger than Cincinnati and the chief wheat shipping port. Karkof and Kief are large trade centers of the agricultural region and Riga is the great northern seaport. Each of these cities is about as large as Minneapolis."

These are average statements such as our geographies furnish *ad infinitum*, and they contain some information. But think of large textbooks filled from cover to cover with this mocking emptiness. The hours of youth are too precious to be spent in collecting this low-grade information stuff. We put up with a degree of dullness in textbooks that would be nowhere else tolerated. Even a cheap daily newspaper would get at the root of thought in a more lively and significant way than this.

The excessive variety and quantity of this low-grade information has been steadily increasing with the multiplication and extension of studies. The burden of trifling and undigested knowledge grows oppressive. The more such facts we gather into our textbooks the less intelligible they become, the more they produce a condition of mental stagnation, of mental dyspepsia, of mind paralysis.

This is what we mean by materialism in education, an increasing mass of facts, a decreasing power of insight into essential meanings. Facts well selected are indispensable. They furnish the soil for the planting and growth of ideas, but the excessive multiplication of humdrum facts obscures the whole range of knowledge. Requiring children to memorize and recite this sort of stuff from day to day produces a condition bordering on stupidity (even in bright minds). That these statements are somewhere near the truth anyone may convince himself who will take the pains to examine a class of older children from an average school where such drills are common. The almost utter lack of thought or power to interpret the meanings of the facts learned is a constant source of regret, if not of wonder.

A greater surprise still is met in the discovery that even rich and fruitful thought studies, like science, history, and geography, are most beclouded with this overhanging materialism, this cumbersome load of ill-interpreted facts.

Ideas, on the contrary, like lighthouses along the shore, should guide the student through the course of study. It is the nature of ideas to bring enlightenment and uplift, to unburden and liberate the mind, to send the light of intelligence flashing through the tangled mass of facts, and to bring order out of chaos.

To continue piling up facts in the course of study after this dumpish fashion is to increase the mental confusion of children, to augment, if not to produce, stupidity. This is materialism in education in unhappy contrast to ideas and idealism.

Three false substitutes for ideas. — We have thus mentioned three fraudulent substitutes for ideas, three prolific sources of dullness and excessive routine in our schools: first, the overemphasis of mere forms and symbols; second, the dexterities and showy accomplishments upon which the teacher's heart is set; and, third, the fact-cramming materialism which overloads our school course with heavy, low-grade freight.

It is the first duty of teachers to restore *ideas* to their rightful authority and leadership in education, to expel these usurpers or at least to reduce them to their proper subordinate position as servants to the lawfully constituted ruling ideas. Strong, vitalizing ideas, reinforced by the influence of the teacher, are more than competent to break down these three long-established obstructions in the pathway of good teaching.

What is the plan of campaign by which a decisive victory can be achieved against the combined forces of formalism, showy routine, and materialism?

Children just entering the primary school stand face to face with the first obstacle, the forms and symbols. How shall thought invigorate the necessary form drills and exercises of primary reading? Many excellent primary teachers have struggled for years with the problem of yoking together thought and form. The victory over this difficulty has been won by giving the primacy to ideas and the second or subordinate place to forms. The current of vitalizing thought is the one stream which invigorates the whole of primary education. The classic stories, songs, games, nature studies, and poems which precede and accompany early reading exercises keep interesting and valuable thought always

in the forefront. The child's mind that from the earliest years is kept alert and expanding with vital ideas will bring a reënforcement to all reading exercises which no amount of word drills may supply.

There is indeed some excuse for lack of thought in early primary reading, in writing, and in spelling. The mastery of symbols and word forms requires much labor without marked progress in thought. But an exclusive preoccupation of children, for weeks or months at a time, with word forms and sentence drills is dangerous to mental growth and is not conducive to the best progress in reading itself. A child's mind requires awakening and enrichment with ideas and *in full measure*, even before the drills in reading begin as well as later and throughout the course. In all other studies where a knowledge and mastery of forms is required the same principle holds.

The second obstruction to the child's progress is built by the teacher himself directly across the pathway of knowledge. It is the teacher's own preference for a highly developed skill in oral reading, in drawing, in elocution, in writing, in number drills, or even in constructive work. It is the too early triumph of formal technique. The nicety of workmanship in small things and facile skill in execution are persuasive allurements to small minds. That boy is fortunate whose mind is too large to be taken in or whose teacher is too sensible to allow him to be satisfied with the graceful and showy penmanship of the commercial school or with the easy execution of a few rattling tunes on the violin. During the period of youthful growth, of continually enlarging conceptions, fine technical execution should never be

set up as the main object. Children should be constantly outgrowing their present selves, casting off their old garments, like a caterpillar, by successive molts, pushing on rapidly to new and higher stages of growth in thought. There is no surer sign of arrested development, of the stoppage of the normal growth in both teacher and pupils than devotion to these pet drills and formal hobbies of the schoolmaster. In climbing up the rugged hill of knowledge the teacher (forgetting the law of growth) loves to stop midway to cultivate some small formal patch and to stay his pupils in this narrow enclosure. An eternal vigilance in keeping open the avenues of quickening thought and expanding intelligence is the only hope against this relapse into contented routine.

Our present school course itself with its increasing accumulation of ill-assorted facts is the third principal obstruction in the pathway of a growing mind. Mind, in order to strengthen, must have mind nourishment to feed upon, not a preponderance of rank material substance. From the dull monotony of encyclopedias and the ponderous materialism of our textbooks there is but one escape; namely, that into the inspiring world of thought. There is but one cure for materialism and that is idealism. To simplify and reorganize our course of study around a hierarchy of ruling ideas — this is the manifest solution of the third great difficulty in education.

From all these excursions into the fields of dullness and mental inertia, we return always to the source of power and light — ideas.

Education begins and culminates in ideas. — Those studies which quicken growing minds should have the

preëminent leadership in education. There is to-day less controversy than formerly as to what the thought-provoking studies are. By common consent, though not without much grumbling, the unfruitful, thought-deficient studies, like spelling, writing, formal grammar, and reading, have been pushed into the background while the stoutly equipped burden-bearing thought studies have forged to the front as the real fighting squadron. The baggage train can bring up the facts. The thought life of children can not rise above the sources from which it springs. The territory, drained by the formal, instrumental studies is an arid land whose springs are mostly dried up. But the best parts of literature, biography, science, and geography abound in copious fountains of inspiring thought. The whole force of education culminates in the progressive, stimulative ideas furnished by these studies. Their one purpose is to master the world from the standpoint of ideas, to unravel the tangled complexity of human affairs, and to make the solid world itself transparent through the penetrating and interpretative power of thought. When we reach the heart of things in studies and in life, we are in touch with these central ideas as with nerve centers. The best writers among poets, scientists, and historians for both children and adults are already in this current and movement of thought. Their works are the visible expressions of these fundamental ideas. The purport of education is to complete the circuit by establishing the connection of each child's mind with these vital ideas as sources of power.

Education rests upon the conviction that ideas which

become deeply rooted in childhood and youth grow into dominant power and control in later years.

Many personal illustrations may be cited to show this concentration of influence in the channel of single ideas. Even in boyhood William Penn possessed strong religious convictions. He early conceived the idea of religious freedom and toleration, and it wrought so strongly upon his mind that he suffered long imprisonment in loathsome jails in its defense and later exerted himself powerfully and successfully in obtaining relief for his persecuted friends. With his growing character and influence this conception of freedom of conscience in religious affairs evolved into such strength that he undertook at great expense of money and labor the liberal planting of this idea in the province of Pennsylvania. Through years of disappointment, tribulation, and anxiety he adhered to his deeply rooted conviction and founded upon it one of the most influential and progressive commonwealths of modern times.

Samuel Adams, at the age of twenty-one, in 1743, in his commencement oration at Harvard discussed the question: "Whether it be lawful to resist the supreme magistrate, if the commonwealth can not otherwise be preserved." Twenty-one years later upon entering the Massachusetts Assembly he took up the gauntlet against the governor of the colony and the king of England. The simple right of Englishmen to govern themselves, to make their own laws, and dispose of their own property was the strong thought that sustained Samuel Adams and his companions in the eleven years of struggle with England which brought on the Revolution and has changed the politics of the world.

SUMMARY

The origin and growth of ideas as they spring up and develop naturally in the child's mind are matters of prime consideration in planning a course of study.

For their germination and growth ideas require a complete, favorable habitat, a natural life environment.

The biography of an idea is seen in the reconstruction of Vienna and in the growth of the concept of the home. The original environment from which an idea sprang deserves a careful study.

The growth of ideas has been interfered with by three powerful school tendencies: overemphasis of forms, showy dexterities, and the dull materialism of dry facts.

The inspiring growth of ideas is the sole resource against these strong tendencies toward dullness and inertia.

Each child should come into vital contact with these ideas as sources of power. They properly organize knowledge into tendencies and habits.

QUESTIONS FOR STUDY

1. Trace the steps in the analogy of plant growth to the growth of ideas.

2. Explain the application of the parable of the mustard seed to education.

3. Illustrate the use of the term *habitat* as applied to some specific idea.

4. What are the essential conditions for the growth of an idea? Illustrate.

5. How may ideas be frosted or damaged in their early growth?

6. Show why the planting of a single idea may be a great achievement.

7. Name an American city that could be used to illustrate the same idea as that of Vienna. Outline the plan of treatment.

8. When may the school treatment of an idea be said to be adequate?

9. Describe the short-cut method of treating important ideas. What is the result?

10. What ground is there for saying that the important ideas are few?

11. Is it feasible to work out the home idea as broadly as is indicated in this chapter? Give your reasons.

12. Why make use of the original historic setting and growth of an idea?

13. On the basis of this discussion of ideas what changes in textbooks would seem advisable?

14. Why may important ideas be described as standards of measure?

15. What standard of thoroughness should be set up for the mastery of formal studies?

16. Explain your understanding of *materialism* in education.

17. In what ways may teachers obstruct progress in the growth of ideas?

18. Why may it be said that education begins and ends in ideas?

19. What psychological basis is there for this theory of the growth of ideas?

20. What is the constructive importance of ideas in the curriculum?

CHAPTER VII

THE ECONOMIES OF AN ORGANIZED COURSE

The tendency to scatter. — If the theory of a few basal types as a groundwork for the organization of knowledge is correct, the way may be opened for a surprising economy of effort in mastering studies. The need for such economies is apparent. Our present course has diffused itself widely and superficially over many diverse fields of knowledge. It is extravagantly loose-jointed and incoherent. With its manifold demands modern education shows a clearly marked impulse to scatter and to run at random through the newly opened territories of knowledge. Even the children have been turned loose in all directions on exploring trips. Thus the forces of education have been dispersed upon many different errands and have not yet returned to headquarters. It may be doubted whether we have any headquarters. Our new-found freedom to scatter abroad has not yet been fully satisfied, and the return movement toward organization has scarcely set in with full strength. Yet this disbursement of mental effort over all the spheres and hemispheres of knowledge has set sober minds to thinking. The broad road of "scatteration" in studies may be the road to failure if not to destruction. "For strait is the gate and narrow is the way which leadeth unto life," and fulness of life is what we properly covet.

Proofs furnished by well-organized units. — As a means of curbing this present broadcast tendency in education, we undertake to emphasize the basal simplicity of well-organized knowledge, that is, knowledge in which large thoughts function constructively. What are the tangible proofs that organization can correct the evils of our congested and weakly articulated course of study? A few big constructive object lessons in organization springing directly from the heart of school studies are indispensable. Some of these have already been presented. The proposition is not merely to work out, exhibit, and emphasize these large teaching units but to group around them as developing centers of organized knowledge the essentials of a course of study. We are under obligation to present the proofs of a practically organized and thus simplified course.

Prevention of waste. — On the negative side the purpose of reorganization is to eliminate waste, to get rid of the burdensome and superfluous materials that serve only to clog the progress of thought. A closer inquiry will bring to light a surprising amount of this unprofitable waste material. On the positive side organization economizes by centering effort upon the main productive channels of thought and experience.

The large teaching unit — a new term. — The chief instrument at hand for accomplishing this purpose of economical organization is the *large teaching unit*. It is a body of knowledge collected from different sources and unified on the basis of some constructive idea or purpose, as the Louisiana Purchase, illustrating our westward expansion. It is a rational thought movement combining into one organic whole an extensive

and varied collection of knowledge. We use other terms also to express this large assemblage of related facts, as *unit of study*, *project*, *type study*, *enlarged object lesson*, or *instructional unit*. The fact that we are compelled to make such elaborate efforts to explain the meaning of this term is proof that it is somewhat unfamiliar and is only gradually finding its way into pedagogical literature. Yet it is the only approach to rational simplification. Perhaps the fact that we have no familiar term or phrase to express this ground organization of knowledge into large units is proof that teachers as a rule have paid little attention to organization and have been satisfied with fragmentary and unrelated facts. Our textbooks and disjointed courses of study would lead us to the same conclusion. The familiar word "topic" bears some resemblance to the *unit of study*, but it fails to connote that progressive organization around a center of thought, and it fails likewise to express the dynamic quality of growth and expansion in thought.

The large organization of studies belated. — The active world outside of the school has been at work in recent years organizing and reorganizing its resources and its activities into larger and again into still larger units or wholes. Huge organizations of men, of capital, and of physical resources have become commonplace, *e.g.* railroad systems, insurance companies, express agencies, the post office, the large city banks, the United States Steel Corporation, universities, and mail-order houses. While the business and industrial world has been learning and applying the lessons of economy from organization on a large scale, the schools have fallen

behind. They are still busily repeating the names of isolated capes and bays and islands and towns and products and other miscellaneous facts, in the same old-fashioned routine, as if organization had never been heard of. As compared with practical life the schools are fifty years behind the times in the matter of the effective organization of knowledge materials. Modern business could not be carried on at all on such a disorderly basis.

Children should be trained for an organized world. — Moreover it is now the recognized special duty of the school to fit children for the organized social and co-operative activities with which they are environed. The child will never understand this world until he finds his way intelligently into these new and more complex organizations which society and business in their growth have achieved. This intimate relation between the organization of school studies and the organization of practical activities in society is no mere accident. It lies at the very center of our problem of the reconstruction of studies. The organizations seen in life about us are big, conspicuous object lessons, revealing clearly to teachers and children the powerful agencies that shape and dominate the world's life. The child who plods along through school studies, memorizing lists of unrelated facts and miscellaneous data, is getting no taste of real life, is getting no grasp of the system of things to which he is shortly coming. All too soon he will be thrown into an active bustling world where persons and things are thoroughly organized into large enterprises and developing projects. Many of the most important things will seem strange

and unaccountable to him, because this is not the kind of a world he has been studying about in the schools. He has learned the names of the rivers of Russia, the list of British kings, and the definitions of the eight parts of speech, but the open shop is a closed secret to him; the city water supply, whether it brings health or disease, is a mystery; even the electric current that lights the home and cooks the breakfast bacon comes from somewhere out of the great unknown. At home or from the newspapers the child may have learned something about these big social projects, but the school in its principal studies is tolerably immune from any close contact with life interests. It prefers a cloistered bookish curriculum of its own peculiar traditional fabrication. To say the least, it has not yet found in the practical organizations of real life the basis for its own organization of school studies.

A welcome task for the child. — If this is really the inviting task set before the child, to get the effective mastery of his environment in its own main features, the chief economy in education will be found in centering his energies upon this task in its typical problems. It is a welcome task to the child because nothing suits him better than to engage his thoughts and his active efforts with the ongoing activities and projects that face him in the doing world with which he is in perpetual contact. To turn the child away from this task into a bookish world of remote and disconnected facts and cloudy generalities which seldom hitch up with life projects is a sinful waste of youthful energy. That there is an enormous waste in fruitless efforts at study is painfully evident to any experienced teacher who has

observed the work in all grades from primary through the high school.

Moreover, such waste is largely due to a bad selection and organization of materials in our commonly accepted course of study. Even a first-class teacher is seriously handicapped in being compelled to follow rigidly such a detailed course of study. Very much depends upon the resourcefulness of a good teacher, but every superintendent should remember that he can seriously cripple the best efforts of his superior teachers by laying down and requiring of all teachers a fixed, detailed routine of studies that has all the defects and faults of which we have been talking.

Large units eliminate waste. — An instruction which is limited to well-selected teaching units relieves itself at one stroke of quantities of merely factual knowledge which till now has held a respectable place in our curriculum. This low-grade factual material, when brought into comparison with vital thought centers, is of such trifling worth that it can not maintain its respectability. To drop out this accumulation of deadwood from studies need not awaken our sympathy. Tradition has already kept it in place too long, and we may let it disappear without regrets. Even the dull lists of so-called important facts deserve to go the same road to oblivion unless they can be energized and associated with other materials so as to contribute to important thought centers. Bare facts and miscellaneous collections of so-called important facts, which have not found their proper companionship in some well-organized group, are of no use to anybody. But just such facts grouped and welded together by a strong

aggressive purpose may be of supreme value. If we could once set up the true standards of value and, on this basis, clear the ground of all the waste material that now cumbers the course, we should then be able to organize studies on a simple plan. But this means laying the axe to the root of the tree and hewing out whatever is an offense.

Poor arguments rejected. — The various arguments that have been set up in behalf of this static, materialistic, or merely factual knowledge — that it serves well the purpose of discipline; that the facts may possibly prove valuable upon some future occasion; that they furnish a broad survey of important fields — all these alike may be thrown into the discard. They are the patched-up defenses of a bad system. The labor wasted on this kind of dull, shallow study is far in excess of any value that can be derived from it. Besides, it has a negative, below-zero effect. It dulls and blurs the mental vision instead of making it sharp and keen. This bad effect is really its death warrant. It deserves to hang for the evil it has produced. We demand a course of study that is primarily qualified to stimulate the mind — not to blunt it or kill it. There is necessarily some uninspiring work to be done in all studies, but we need not go out of our way to increase dullness. We can far better afford to accentuate the live centers of thought — the main strongholds of organization — and to cast aside the superfluous inutilities.

The well-tested results of large units in practice. — The superior value of large topics is no longer a matter of conjecture or of untried theory. Many classes of boys and girls of intermediate and grammar grades

have been given a taste of these large teaching units. The highly valuable results are now matters of record. In these large study units we now possess well-tested standard values as illustrated by well-taught master-pieces in literature and by typical projects in geography, history, and science. In view of these results there is no longer any sufficient excuse for retaining a patched-up, miscellaneous, and wasteful course of study. For lack of organization out of strong thought elements such a course is extravagantly wasteful of time and effort.

Tests and measurements a means of elimination. — One of the valuable results arising from the present system of tests and measurements is the plan to reduce the necessary formal studies to their lowest terms and to determine the most economic methods for mastering these essentials. This process is now well under way and has the effect of abolishing much waste and of confining the symbolic studies to their narrowest limits. This includes language in its various forms, much of elementary reading and arithmetic, spelling and writing, and the purely symbolic elements of all other studies. The importance of mastering these forms as useful and necessary instruments in education gives them a place among the indispensables.

Important ideas build the framework of studies. — But a still greater economy and removal of waste can be provided for by a yet stronger emphasis of *thought centers* in the controlling content studies. Important ideas are the sole organizers of knowledge. Concretely illustrated and expanded into their full meanings, such ideas furnish the constituent units in the

larger organization of the curriculum — like the states in the formation of the Union. Big ideas supply the constructive framework of these studies without which they collapse into a shapeless mass. But why waste time in overemphasizing ideas as centers of thought in school studies? Our excuse for this renewed and repeated emphasis upon ideas is the simple truth that important ideas have been pushed into the background by the hordes of merely factual materialistic substitutes. Ideas now fail to dominate even in prolific thought studies. The great rabble of facts and generalities has poured in and preëmpted the fields of study. You will look in vain anywhere in our present course of study to find any great idea unfolding itself in its full strength. This fact enfeebles all studies.

There is one possible exception — the masterpiece of literature, well selected and well taught as an organized, artistic whole. But too often even this is dealt with from the standpoint of the merely factual, degraded to the level of the commonplace. Instead of such intelligent groupings of liberal knowledge informed with the best ideals, our course displays a multitude of dry facts and summaries strung out in endless tiresome succession. This is little better than trash. It should be cleared out and thrown away, and a few vital constructive ideas substituted. This substitution of organized thought centers in place of the present conglomerate heap of facts and generalities would be the essence of economy and of good sense in education.

The trivial and the important. — Our present course of study is guilty of an extravagant waste by dealing with many trivial matters as if they werè important

and by dealing with really important matters in a trivial way. In the well-known Scriptural phrase, we tithe mint and anise and cummin, but we omit the weightier matters of the law. It is time now to stop waste, to return to the weightier matters, and to found a course of study upon the central constructive ideas.

We need what might be called powerful *consolidation centers* in studies — except that, as they are growing and developing centers of organization, they are not static. The outstanding superiority of these big units as commanding thought centers is so imposing that the jostling crowd of petty topics and small truisms in the course can not fail to show their littleness, their insignificance. Every time we give a large teaching unit full swing to develop its entire strength as a knowledge builder, the host of dwarfed topics in our present course shrivel up. Whatever is insignificant or stands alone, unrelated to the centers of thought, fades out of sight. This plan gives us an easy elimination of objectionable features. Here is a natural principle of exclusion based on demonstrated standard values.

The growing strength and cumulative value of typical units. — In addition to what has thus far been said about central teaching units, they have what we may now call a *cumulative* value. Great as may be their primary value in their first full expansion as large object lessons, they are destined to still larger unfolding in future studies. They are deep-seated and long-lived creations of the mind and, as they grow toward maturity, their vital energy increases. A strong topic on sanitation in fifth and sixth grades will grow into larger, stronger kindred topics in seventh and eighth

grades, and a closely related idea will reappear greatly reënforced in high-school and college courses. The big units of study or thought centers in the elementary school strike deep into fundamentals, and their organizing strength and interpreting value will increase as the course of study evolves in its natural order. Such teaching units on their first appearance grow into strong, full centers of organization, and these develop through kindred types in later years into powerful, continuous strands of well-knit, firmly organized knowledge. This is the result we are aiming at in the reconstruction of the course — a steady, cumulative, strengthening organization of knowledge.

Objection to large units on the score of economy. — We have just been discussing the need of economy in the studies, and now we are met by a sharp objection to large teaching units on this very ground — that they are uneconomical, that they consume so much time. This is a natural retort from those who object to big topics. In fact large units of study require more time than anything of which we know. The elaborate, intensive treatment of a great project, like the rebuilding of Paris and of modern cities, requires a large, a very liberal consumption of time — out of all proportion to our present distribution of time in school subjects. At the first glance this unusual expenditure of time and effort on one topic appears to be the very contradiction of economy. But this seeming extravagance in the expanded treatment of important topics is what we wish to emphasize as the best form of economy. On the other hand the equal distribution of time in small allotments over a multitude of major and minor topics

is an utter waste and extravagant squandering of time of the very worst sort. The notion that an almost limitless number of topics in history or geography are of equal importance and require each the same amount of time is a piece of sublime foolishness. It leads to a pitiful tragedy in school studies. The characteristic thing about knowledge is the supreme, the transcendent value of a few fundamental ideas, the far-reaching import of a few centers of thought. When we encounter one of these powerful thought centers suitable to the capacity of children, we should spend upon it all the time and collect all the knowledge resources that are necessary to secure a full understanding and a complete mastery of it.

Parable of the miner. — A miner who strikes a rich vein of gold can afford to dig deep, employ help and machinery, and put large expense and labor into the full exploitation of his claim. A thin weak vein of gold is not worth working at all. Likewise in school topics we can not afford to spend even a small amount of time on shallow, trivial topics. There is only one thing to do with this whole vast collection of small or trivial topics in our present course, and that is to drop them out of notice as quickly as possible. On the other hand, we can not afford to treat important topics in a scant or trivial way. Put into the course of study only those topics which have high potential value, and give to each such unit its full, unstinted allotment of time and illustrative content according to its worth. This would give us a stimulating and highly productive course of study. An acre of land, enriched and intensively cultivated, is sometimes more profitable than a

hundred acres treated in a careless and wasteful fashion. A run-down cotton plantation in North Carolina which had not been paying expenses because of wasteful exhaustion of the soil by long cropping and careless treatment was taken in hand by a thrifty, scientific farmer. By deep plowing, fertilizing, and intensive culture, by drainage and crop rotation, by careful harvesting and marketing of his products, and by use of live stock, in the course of four or five years he restored this farm to fertility and made it a profitable investment. The studies of children on important topics should be full and intensive rather than shallow and extensive.

In reply to the criticism that the full treatment of large teaching units is a waste of time, we may say that the large amount of time spent on such a unit is the proper and only measure of its value, the complete demonstration of its solid importance. To give each subject its full due would be a safe rule to follow in all studies. Indeed the full treatment of a large topic is a first-class achievement in study; it is a very landmark of real progress and is the only way to establish both teacher and children in a sound method of study.

Rich scholarship in elementary schools. — This expansive handling of large teaching units is no trifling matter. It looms more and more into importance as we try to deal with it. One reason why it requires so much time is that it demands deep, sound, practical scholarship — indeed a very respectable kind of scholarship — such as we have not taken much pains to cultivate in the elementary schools. Unhappily there is to-day in general a depreciatory attitude toward the scholarship of the elementary school. It is treated

slightingly even by the normal schools. The actual course of study with its wholly inadequate treatment of important subjects has brought the whole school into contempt. But there is no ground whatever for the opinion that the elementary course of study should be lacking in strong, rich, scholarly fullness and organization. This enrichment with scholarly intensive knowledge is precisely what our elementary school most needs, in fact, is the very thing for which it is famishing. Famishing is a strong word, but strong words are sometimes needed, as in this case. Jesus said, "If a child ask bread, will ye give him a stone?" We have been giving the children some stony diet in the course of study. Our textbooks are proverbially dull. It would take a genius to make them any duller. Many of them are shamefully trite and insipid and commonplace. This is not necessary. It is a totally false conception of what children are qualified to do and to enjoy. To impose this dull and unimportant information upon children is a misappropriation of school funds and of school facilities and a crime against children.

No short cut to the interpretation of ideas. — The elaborate treatment of an important type study is therefore a merciful economy, a relief and inspiration to children. In this case the old proverb holds that "the longest way round is the shortest way home." There is no short cut to the unfolding of fundamental ideas. Any attempt to condense and abbreviate big study units is more than a foolish waste of time. Such ill-advised efforts to shorten the process of learning are positive blunders. There is imminent danger of short-circuiting the process of learning so as to get a hurtful

result. Instead of sharpening the child's mind we dull it. Our textbooks have tried this shortening process, and they are now loaded up with abrupt, scrappy, dull statements about important topics. The result is not an easy road to learning but a way made artificially long and tedious and trifling. Instead of a full treatment we give important subjects what Daniel Webster called "the cold respect of a passing glance." This is not the happy way to instruct, but the sure way to mutilate and spoil and devitalize knowledge.

To grow large trees on a forest tract we must not crowd them closely together. Each tree, to expand to its full size, must have adequate room to spread on all sides. In like manner the magisterial units of study require plenty of time and space in which to develop. There is no short method, no haste, for haste makes waste. In its process of organization the major unit draws to its support and incorporates into its own organic growth the whole range of pertinent knowledge. No effort is thrown away on unrelated facts. More and more a center is created for complete correlation with other studies and with experience. The foundations of knowledge are laid deep and strong in this energetic, determinate growth of thought.

The equipoise between facts and ideas. — A very common difficulty in everyday instruction is found in the skillful choosing and grouping of illustrative examples upon abstract principles. Some teachers impose abstract rules and principles without adequate illustrations; others teach numerous facts without bearing on fundamental principles. A constant and intrusive problem in teaching and one ever-recurrent in all

studies is the sharp demand for apt demonstrations of essential truths. In this matter there are two common ways of attempting the impossible — one is to teach rules and principles without illustrations; the other is to assume the meanings of facts without noting their bearings on fundamental principles. In the introduction to new and difficult topics the really serious problem is how to get the right combination between illustrative facts and general principles. The fully elaborated project is a determined effort to solve this problem, to set up an unimpeachable demonstration of this process that bridges the connection between fact and idea. If we could strike the golden mean so as to get just the right combination between illustrative facts and general principles, we should solve the most serious problem that troubles all teachers. This is the true economy of the teaching process.

The successful project maintains an equipoise between the organizing concept and the factual material required to give this concept its life setting. This balanced relation between the grosser facts of experience and the clarifying, refining thought is always difficult to guarantee. Enormous waste attends the clumsy gathering of facts without accent upon informing ideas, and there is an equal waste in fumbling at fugitive concepts without sure backing in appropriate facts. The two standard blunders in teaching are, first, this overemphasis of unrelated individual facts and, second, the insistent offer of bald abstractions or dictated conclusions with scant or inadequate illustrations.

Coöperation and intimate association between facts and ideas. — The completely expanded type study or

project is an effort to bring about a complete coöperation between these two contrasted but complementary elements of knowledge, to bring the explanatory facts together into such a grouping that the idea springs out of them as the plant from the soil. To isolate facts from ideas and to treat each of them separately is fatal to both and is fearfully wasteful.

Architect and workman. — In constructing a house the architect furnishes the plans and specifications; the contractor and the craftsmen, versed in tools and materials, apply the technique of construction to the building processes and plans. But after all the architect must rely on intelligent workmen who can read and interpret the blue prints as a basis for exercising their technique, in short, can carry the ideas into the materials.

Large teaching units the basis for the union between facts and ideas. — We have been dealing here with a difficult problem which those are compelled to face who are selecting and grouping knowledge materials into such teaching units as are most suitable for instruction. Our textbooks and teaching plans have been at fault in not setting up as a basis for study much larger teaching units or wholes. Organized standard units of instruction as substitutes for the multitude of short and scrappy topics are the need of the hour. The course of study has reached a stage where teachers must expand their conceptions of the major teaching unit and give it much larger dimensions. The numerous small topics have had their day, but they belong to the past. They have been weighed in the balance and found wanting. They are now giving way to a stalwart breed of

major topics, each one of which is in itself a powerful center of organization, *e.g.* a project, such as reforesting the pine lands. One of these standard major units grows into a body of well-arranged knowledge in which some one idea in process of development is the principle of organization. Teachers must learn to grapple with these expanding projects which are thought enterprises of large import. A great unit of study is the proper housing of a single significant idea, *e.g.* the Pennsylvania Railroad Station in New York City. Such an important idea, if put to work properly, will build its own house; it will bring together and organize into a well-constructed whole the body of factual material required for its complete exposition. This is what is meant by the proper equipoise between facts and ideas; namely, the constructive idea at work building up a composite unit of knowledge out of the factual materials suited to its purpose. Project ideas demand a full scope and plenty of material or they can not do their work.

Niagara Falls is such a combination. — The hydro-electric power plant at Niagara Falls is the product of such a creative idea, and worked out as a project it forms a first-class teaching unit or type study. To bring into a well-ordered treatment all the facts required to give it its full meaning as a representative of such water powers in the world demands a full scientific knowledge and a higher order of organizing ability. Just as the power plant itself is the concrete embodiment of the idea, so the completely organized unit of study is the adequate expression of this idea in its growing life process. In teaching this subject the main difficulty lies in getting the right combination

between the knowledge facts involved in this study and the developing, organizing idea which must be brought out by the grouping of these facts. A project, like the Niagara power plant, described in its original construction and later operation is a genuine combination of these elements because it is a reproduction of a life situation. It follows the actual process in which the idea was evolved by the engineers on the basis of the given facts. Our course of study should be made up in large part of such fully expanded practical units of organized knowledge, such well-balanced combinations of the factual and the ideal.

Examples of quick interpretation. — The quick and correct interpretation of new problems arising in fresh subjects is a sure test of the economical use of knowledge previously gained. A trained physician can examine a sick man and in a few moments of observation and testing, as a usual thing, can promptly and correctly diagnose his case. The doctor's previous experience and knowledge are at ready command and unless the case is overcomplicated he can give a quick judgment and at once prescribe the proper treatment. The expert physician, who is correct in the prompt diagnosis of cases and judicious in method of treatment, is a first-class illustration of a well-educated person so far as his special calling is concerned. His knowledge and experience function promptly and accurately. This is true economy.

An expert machinist can inspect a new machine, and in a few minutes explain its construction and interpret its value, and, if any thing is wrong with its action, he can quickly detect and correct the fault. His knowl-

edge and experience are ready for use. This power to turn knowledge into instant use and to apply it skillfully to new situations is the final stage of a complete educational process.

The mastery of a few fundamental ideas to be used as quick interpreters. — It would be a new-found economy in study if children early in the course could really master a few fundamental ideas in each study. These would act swiftly as interpreters of hundreds of new but kindred topics in later studies. The number of such fundamental ideas is small and as types they have a far-reaching interpretative value, far greater in breadth and intensity than we have usually supposed. The enlarged type study is designed to set forth one of these fundamental ideas — to give it a full illumination, to let the idea grow and expand till it becomes in the child a clear tendency and correct habit of thought. In the second stage of expansion the type is variously applied till the thought becomes more flexible in adjusting itself to new situations. This original elaborate treatment of the fundamental idea gives it a permanent ascendancy in the mind. Every time a complete type study has been intensively worked out and applied the child has been equipped with a new instrument of interpretation which will operate efficiently over a large area of knowledge. One case fully mastered interprets the many.

Time well spent in elaborating big topics. — The unusual amount of time spent on one type study is thus more than compensated in two ways: First, in itself alone the type study is a profitable, stimulating, and comprehensive organization of knowledge. Second, it

is the key which is destined to unlock a large treasury of knowledge which lies waiting along the highway of studies. This powerful combination between fruitful fields of study now opening up and the still richer fields that lie ahead in succeeding studies gives a steady organization of knowledge all along the line. Such a plan must result in a vital, connected system of thought. In well-guided studies of this sort there is no waste. Waste comes from haggling over a multitude of little things. Waste arises from scurrying through a course of study, from scattering attention over a host of minor topics which give no deep, permanent impressions and leave no assets in the form of organized usable knowledge. The mastery of one type study, like Mount Shasta as a typical volcano, goes more than halfway toward the mastery of all volcanic mountains and lava-strewn areas the world over. By centering study upon the few fundamental ideas, we are getting a strong control over those powerful factors of interpretation which lie at the center of all studies. As strongholds of thought they form the bridgeheads for future aggressive movement and organization.

The waste in half learning. — There is no economy in half learning things — in a slipshod, superficial study. Such instruction leaves weak and vanishing impressions. We require knowledge that has a keener edge to it. We can little afford to whitewash the mind with superficial or feigned information. It is soon washed off and forgotten, and the labor has been wasted, to say nothing of the bad habits formed.

In striking contrast to this cheap, shallow culture the searching type study goes deep after the *taproot*

of knowledge at the very start and continues to deepen and enrich the whole subject as it advances. It exhausts descriptive and picturesque language and constructive imagery in the effort to expose the stronger elements of experience. It throws a searchlight far into the important aspects and relations of the subject. It drills into the hard spots and blasts out startling facts. It looks ahead for the wider relations and applications of the main principle. General Grant said that he could never forget the sharply experienced facts of his campaign in Tennessee and southward against Vicksburg because experience had burned them into his memory.

The first Pacific railway. — In a strongly developed project, like the building of the first Pacific railway, the rugged and knotty problems of engineering through the mountains, the boring of treacherous tunnels, the construction of massive snowsheds, the bridging of deep chasms, the breaking through mountain snows forty feet deep, the blasting out of steep cliffs for a roadway — these stinging facts must be burned into a child's memory by a process that is closely akin to experience.

Take time to dig deep. — While this genuine extract from life experience is driving its impressions deep into a child's mind, we need not be afraid of squandering time. The time and effort spent in getting these rooted experiences are precious and profitable to the utmost. In building a great power dam across the Mississippi River at Keokuk, it required much time and titanic labor to sink the cofferdams, to dig out the softer stone and work down to the bedrock upon which the power dam itself was then founded. Much effort is

consumed in figuring out and bringing to a full realization the foundation stage of any big project while the main idea is emerging slowly out of the depths of experience. Let the mind work out its task and give it time to gather all the hard-earned materials it needs to bring to pass a final and complete achievement.

The master key that unlocks many doors. — The results of such a rugged mental experience will not soon vanish. This earned knowledge has taken up its habitat in the child's mind and is there for good. The interpretation of a host of kindred subjects in the future is a ready and swift and appropriate continuation. The child now possesses the master key to that whole line of projects. Wherever in future experience similar subjects are even touched, the mind is alert and quick to interpret. A person is swift to translate meaning into any field of knowledge where he has had a convincing and soul-stirring experience.

A rapid forward movement in later studies. — In the later years of the school course we have a right to expect a quick response and keen, wide-awake interpretation of the larger problems rising to view. The surest way to get this result is to provide for deep, strong, and impressive experiences in the simpler objective phases of these same subjects in earlier years. There should be nothing shallow and superficial in the treatment of topics in the intermediate grades. Carelessness and superficial and slipshod studies here are positive disqualifications for later important subjects and for effective thinking in later years. The very best elaborate organization of big topics, combined with perfected skill in handling such units in the class-

room, is the teacher's only standard for intermediate grades. This is good gospel, but it means hard work along the road of preparation for teaching.

A mistaken method. — Unfortunately our present course of study is largely based on the notion of supplying children in these early grades with vague, general concepts, which later-acquired knowledge and experience may somehow mysteriously develop into clearness. The exact opposite to this is the plain truth. Far better would be a plan for clear, vivid, experimental studies in all these early years, because such intensive experience accelerates progress in later studies.

Why children fail in the use of knowledge. — There is no doubt that these dull studies and vague concepts imposed upon children in early years are responsible for their well-known weakness and inability to remember, to think, and to make use of what they have previously learned. It is, indeed, a common and almost universal complaint among teachers that older children can not use and apply what they are supposed to have learned. They never knew it! In these very things they never had a realistic and solid experience of knowledge. They have been befuddled instead of clearly instructed. Why should we blame children for our own faults? They do what we require of them. We need a course of study based not on an outgrown, worthless tradition but on a clear concept of the experimental basis of knowledge in every important topic. This good beginning should be continued through the succeeding years in a series of strongly experienced projects.

A change in practice required. — The psychology of the concrete, intensively developing type study is

the exact opposite of this dull, routine method. In short, the best theory and the daily practice in schools are in stout opposition. The present practice in intermediate grades begins with a dull plodding method, a collection of dictated generalities, and ends in a formal, verbal kind of knowledge that fades out of memory. In every important topic, on the contrary, knowledge should begin in deep, strong, sharp experience. We should require important intensive object lessons true to life. Our standard of achievement in knowledge should not be a certain quantity of dictated facts or a collection of smoothly phrased generalities, but hearty, convincing experiences, gained by sharp direct contact with important realities.

The significance of fundamental types. — This ingrained perversity in our methods of imposing a false show of much knowledge upon children should give way to a solid mastery of a few basal subjects whose powerful influence can then be felt as a reënforcing energy through the whole course of study. A big topic, like flour milling at Minneapolis, in the fourth grade will clearly explain several important topics in later grades. The same fundamental ideas develop from the first progressively through all the grades and far beyond. When children reach the grammar grades, they are sure to have need for the very same types of thought which they have dealt with concretely in the earlier grades. The new and complex problems that children meet in the grammar grades bear a strong family resemblance to the topics dealt with in the lower grades and yet in a changed and enlarged environment. Because of this continual and well-planned recurrence

of kindred topics, we are disposed to give in early years a special emphasis to anticipatory types — such as river types, biographical types, physiographic types, city types, industrial types, literary types, etc.

A failure to gauge the value of types. — Our present course of study shows little respect for types. The deeper inherent connections between earlier and later studies, welding them together into one continuous process of thought, is not set up as a basis for growth and organization of knowledge. Yet without this, what organization are we likely to find that is continuously constructive through the school years? Does it make any difference whether the well-rounded subject that a child masters to-day has a vital explanatory bearing on a whole series of kindred topics sure to come up to-morrow, a year hence, and so on in succession — all the members of which show the impress of one typical constructive idea?

The original type study developed into a strong thought movement represents the continuous underground connection that binds a whole series of important teaching units into one chain. In its beginning it should stand out strong and clear and demonstrative, and with each successive enlargement it will gather and consolidate into a central core the intense meaning and whole scope of knowledge that its principle naturally embraces.

The consolidation of knowledge. — The chief economy possible in planning the curriculum lies in this consolidation of knowledge and of mental habit along a few avenues of organized active intelligence, where everything counts, where the facts are not accidental

or contingent but contributory and essential, where the acquirements of to-day play directly into future situations with a strong accent and a keen interpretation. Our present course of study is open to radical reorganization in this particular in the interest of economy and efficiency.

A common plan of reviews. — Another efficient means of economizing in studies is a better provision for effective reviews. Such a review is based upon a comparison of later with earlier kindred topics and develops a regular constructive continuity of thought, stretching through the course. It is all the time establishing thought connections of similarity and contrast between earlier and later studies. Each typical project becomes thus an important link in a chain of type studies welded together by one fundamental idea. Comparison is the means employed in building up the series and in establishing a strong continuity of thought through the whole chain of topics. The present common plan of reviews, based on a long tradition, provides for a recurrent repetition of facts and statements in the same order as first delivered with little or no emphasis upon thought relations. It is characterized by frequent reiteration and drill and much consumption of time. It is enforced by rigid schoolmasters in this manual-of-arms method. The review itself is not a reflective process. The memory is particularly emphasized, and a stiff examination on definitely prescribed facts and statements is the final test of efficiency. Some teachers add greatly to the student's burden by extending this austere process quantitatively over a large area of knowledge. This mode of procedure encourages rever-

ence for the textbook and for its infallible and fixed statement of truth, and many teachers believe that this plan results in an admirable kind of thoroughness. It unquestionably produces showy results and a lot of hard work for the student, and this passes currently for good teaching. It is, however, a deceptive form of thoroughness based too much upon verbal mastery.

The Jesuit schools, in carrying out their *ratio studiorum*, applied this review method with a machinelike accuracy and completeness which gave them a great repute in the then teaching world. It suited their medieval, scholastic aim and their rigid linguistic plan of studies. But it is a narrow, arbitrary scheme and fits clumsily, if at all, into the rational richness and variety of our modern thought studies. It breaks the spirit of independent thought and initiative. This method of periodical, systematic reviews for the sake of discipline and thoroughness has come down to us through a long, deep-rutted tradition. It is founded upon the conception of knowledge as a definite and fixed quantity of information which can be mastered through a memory process. The scribes and Pharisees in their day had a body of religious doctrine which had been mastered in this exact way and petrified into rigid forms and was incapable of adjustment or progress.

Reviews based upon a growing process of thought. — As a substitute for this traditional review of stationary facts a plan of review is here proposed based upon a quite different conception of knowledge — as a growing and expanding process of thought. Dynamic constructive ideas, naturally expanding in scope, are the active

agents in organizing knowledge, and this involves the constant reorganization of old knowledge as it is brought into combination with the new. Reviews should express the growth of old ideas as they expand into new and larger relations. This may sound bold and startling at first, but it is strictly true. This is exactly expressed in the Sermon on the Mount when Jesus, in presenting his new idea of the kingdom of Heaven, said, "I came not to destroy the Law and the Prophets but to fulfil," and he certainly gave those ancient ideas a new and unheard-of fulfilment and enlargement. Naming the Mosaic ideas in succession he showed how each should be expanded into this new and larger, more humane conception of life. Just as soon as we accept the proposition that our whole course of study rests upon a few basal ideas that develop continuously and strongly through the years of school life and far beyond, we shall see clearly that this constant and close interaction and integration between old and new knowledge, by which these leading ideas have a chance to grow, is the very essence of progress in studies. The great difficulty with static reviews, oft repeated, is that they mark the stoppage of thought and interfere with this natural process. If the static review becomes dominant in instruction, it throttles education in its cradle.

The curriculum makers. — These basal ideas emerge into prominence from time to time throughout the course in the form of projects or large teaching units. They become the *nuclei* or centers of organization in the whole forward movement. Such powerful units of thought or of knowledge are not themselves static; they are discoveries; they express the big jumps or for-

ward impulses in thought. They are the main stages of the advance march into knowledge. Every fundamental idea expands through the course of study in a succession of impulsive movements through these large kindred stages in a developing order. Unless such a chain is forged out of important units that are firmly linked together by one strong bond of thought, knowledge falls to pieces like a rope of sand. The cumulative results of such a closely woven series of large units is the very economy of time and effort in mastering an extensive field of knowledge. The right kind of comparative review is the instrument which brings the series of large topics into a connected chain of thought and throws into prominence the simple idea that governs the whole. Several complete illustrations of this strong serial combination of kindred topics are given in the previous and in succeeding chapters; for example, the series of canal topics, the series of self-government, the series of river studies. Each main study or at least each group of closely related studies has a few of these chief arteries (or main channels) of thought. Such fundamental thought movements, because they are perpetually at work organizing the materials of knowledge into powerful strands continuous throughout the course, may well be called the *curriculum makers*.

The backward- and forward-looking constructive review. — The constructive review is a powerful factor in fitting together the successive parts of this developing organic course of study. It may be called a scheme of reviews based upon a deliberate and systematic use of comparisons. This means that in handling any new

subject the teacher makes a business of reaching back into previous kindred studies and linking all topics that show important relations with the new subject.

The Nile as a basis of comparison in review. — The Nile River coming somewhat late in the course should be specifically compared with the Mississippi and the Rhine as to deltas, with the St. Lawrence as to the Great Lakes system, with the Colorado, the Ganges, and the Euphrates with respect to irrigation, with the valleys of Mesopotamia, Yangtze, and Rhine as to historical significance. It should be contrasted with other great equatorial rivers as the Congo and the Amazon. Such comparisons should be specific and detailed, based upon fuller knowledge of both subjects compared, and should result in new conceptions and bold conclusions. In our early studies of geography we should have had a full study of the Hudson, the St. Lawrence, and the Mississippi. A full treatment later on of the Rhine in Europe will give opportunity to measure the Rhine by these well-developed standards. The water power of the Rhine at Schaffhausen in Switzerland is compared with the power used by the big flour mills of Minneapolis. The scenery of the Middle Rhine gorge is compared with the highlands of the Hudson. The highlands are more striking as picturesque mountains, but the tops of the Rhine cliffs are decorated with ruined medieval castles. The Rhine springs from the high Central Alps and from glaciers, while the Hudson comes from the low forest-covered Adirondacks. New York on the Hudson is twice as large as all the numerous large cities on the

Rhine put together. Why has the Rhine a delta and the Hudson none? How do the Rhine lakes of Switzerland compare with the series of Great Lakes on the upper St. Lawrence? Are there any floods on the Rhine and the St. Lawrence? Why have we far greater floods on the Ohio and lower Mississippi? The Rhine is famous through two thousand years of history, and many old stories and legends are associated with its ancient castles. Has the Hudson anything to compare with this? How is the Hudson renowned in history and legend. Consider Irving's stories, Washington and Arnold, Burgoyne's invasion, Cooper's novels, etc. Such comparisons convert every new topic for study into a detailed and effective review of numerous previous studies. Later and earlier subjects, no matter how far apart in time or space, are brought close together, definitely measured, and their relative values sifted out.

Comparisons are based on topics that have been thoroughly studied. — Such elaborate comparisons are serious undertakings and are designed to fill up a large place in the whole plan of instruction. They presuppose the earlier intensive treatment of all leading topics as a basis for later comparisons. Shallow and superficial treatment of important topics offers no proper basis for later comparisons. Comparisons are a prominent part of a plan for a thorough and masterly study of a series of related projects. They require a deeper penetration into the essential thought problems in every subject studied. They furnish a thoughtful, reflective process for working over and assimilating knowledge.

Comparison is a method of research into large values, a mode of standardizing the materials of knowledge and of continually grouping them in their proper centers. Comparative judging is at the bottom of every simile and metaphor and analogy showing the constant dependence of the mind upon measurements as the means and method of thought. Every parable is a striking comparison. Hyperbole and keen forms of wit are comparisons. Emerson says, for instance, "The mountain and the squirrel had a quarrel." After a comparison of merits the squirrel says,

"If I can not carry forests on my back,
Neither can you crack a nut."

Historic comparison. — In history, biographical comparisons with regard to personal qualities and achievements give an excellent exercise in discriminative judgment. Robert Bruce, as described in Scott's *Tales of a Grandfather*, will stand comparison with David, the outlaw king, in Hebrew history, with William Tell in Switzerland, with Robin Hood in England, and with Daniel Boone in Kentucky. These are kindred spirits and in far distant times and places show in striking variation the qualities of nobility and high purpose in action. Grouping these men together and comparing them with one another, each in his special environment and exploits, give a review more valuable than any other we can devise or suggest.

The full, even elaborate, study of William Penn as a religious leader, later brought into definite comparison with John Winthrop, Roger Williams, and Lord Baltimore, with an inquiry into the peculiar religious views

of each and how their ideas worked out in the early settlements, will do much to clear up the life and purposes of the early founders of American states.

In previous chapters we have given repeated examples of this plan of review by comparison, and it may be appropriate now to draw the conclusions that may be reasonably inferred from this systematic curriculum plan for close association of old and new studies every day and in every large teaching unit.

The significance of comparison as an organizer and simplifier of knowledge. — It is a deliberate, continuous process of progressive organization combined with thoughtful reorganization stretching through the years. It may be called a natural process in the sense that, while it demands thoughtful effort, it meets a vigorous and hearty response from the children. The fact is deserving of special emphasis that the similarity discovered in kindred topics develops a deep and powerful trend of interested thought in a long sequence of important teaching units. It rewards well the keener continued attention brought to bear upon it, because in its process of organization it becomes a powerful simplifier of knowledge and results in what we may call the best economy of time and effort in studies. The review by comparison is the well-chosen means of increasing and cementing the natural and vital relationships that should exist between the different parts of knowledge — up and down the course and crosswise among studies — all converging toward simplicity and economy. Comparison develops into a superior kind of thinking, and it pays to put into it as much time and serious effort as are necessary to make it completely effective.

It discovers new and unthought-of qualities in past experience and at the same time clears up new problems. It is both regressive and progressive. Even originality of thought, a rare manifestation, has a chance to appear.

The traditional course often repeats a whole year's work. — The traditional *memoriter* review is a repetition of the same outline of topics previously studied. In one state course of study the same outline of topics used in the fourth grade is repeated in the fifth grade. There is a strict identity or duplication of topics in the same order with slight variations in phraseology. There is a purpose, of course, to enlarge somewhat in the second year upon the treatment of the previous year, but the enlargement is not serious, as the treatment in both cases is very superficial. It is the same mechanical round of static reviews and dull repetitions, as if all the children in the class were retarded or delinquent and were required to repeat the year's work. This is merely an illustration, but not extreme, of what is a commonly accepted plan in courses; namely, to repeat in a later year the same outline of topics assigned one or two or three years earlier, a very familiar practice in geography and history and language.

It is a common and rightful complaint in many schools that the last year's work of the grammar school is a stale rehash of topics that have been gone over time and again in the preceding grades. There is no real progress into new fields of knowledge. Then we hear gloomy complaints that children show no interest and no desire to go on to the high school. Such lifeless repetitions and stolid reviews are not founded on any sound basis in human nature and should be regarded as a

part of the worn-out machinery of the schools to be sent to the scrap heap.

A large teaching unit is never treated twice. — In this plan for a reorganization of the curriculum on the basis of large types, carefully selected and arranged, no large teaching unit is ever handled twice. But once indeed it is given a complete overhauling, an elaborate, and, if you please, masterly treatment. There is no good reason, for example, why the poem, *Evangeline*, should be treated as a complete piece of literature twice or three times at different points in grammar grades. We should use our best judgment in determining in what year it can be most appropriately used, if at all, and then at that time expend all the effort and skill necessary to give it a complete artistic treatment so as to allow the children to appropriate it appreciatively in the very best way. At all events they should not be required to plod through this story two or three times superficially, on the ground that they are not expected to get much the first time and by repetition may add a little more the second or third time. What is true of literary masterpieces may be equally true of all first-class units of study in history, science, and geography. On the other hand frequent comparisons of *Evangeline* with other poems of kindred spirit and quality may be made throughout the succeeding course and are an essential part of the forward and backward movement in thinking.

A large undertaking looking toward a great achievement. — The elaborate presentation, discussion, and mastery of a first-class teaching unit at one time should be a memorable, outstanding event in the lives of

children, and the convincing impression of its value should abide as a standard of comparison and judgment for future years. It should make itself felt all along the line as a basis of future growth and organization. In short in every important study project we are demanding a deeper insight and a far broader range of thinking back and forth along the main pathways of knowledge. Our thought should penetrate farther into each important topic and should connect each subject with all kindred subjects previously studied and later on correlate this topic with those which are to follow. It is time now to say good-bye to the scrappy, barren, outline treatment of numerous topics, to rigid, thoughtless reviews. We should take this matter of teaching seriously and allow children to deal with big subjects after a large fashion. This will set up a standard for teaching which will make it the greatest of arts. The building up of a practically organized body of knowledge, with the habits of thought and judgment necessarily involved, is an educational project well worthy of our most serious consideration.

Every big topic opens up a new world. — Every big unit of study taken up in fourth or fifth grade, at its first appearance, gives ample entrance to a wide-open field of profitable knowledge, a sort of paradise for the young thinker and explorer. It is no rehash of old materials. Yet it seeks a revival and reacquaintance with all kindred knowledge that has preceded it. Every big topic should be the discovery of a new world, and in this enterprise every child should be a young Columbus looking out with genuine and open-eyed wonder as this new world begins to disclose its treasures. Nor

should the child suffer any disappointment or disillusionment as he goes deeper into his subject. He is like Boone descending for the first time into that valley of Kentucky where he found a genuine hunting ground that matched up to his vivid anticipation and satisfied him to the full. Every year's study in history or science or geography takes up a fresh new series of topics. While intimately related to previous experiences, they are advanced posts in the onward march and possess a full measure of adventure, of freshness and novelty. The world of experience is more than rich enough in promising and gratifying subjects of study so that we need not fall back upon dull and spiritless repetitions of worn-out topics.

An unlimited supply of rich and resourceful topics.

— Truly there is an abounding supply of resourceful projects, rich as the best mines of gold and exactly suitable for children. This demand for new and expanding and liberalizing topics every term is legitimate, and, so long as these superior resources for mental enrichment are available, the failure to supply them is little short of a crime.

As children move forward on the stepping-stones of these large learning units, the scope of knowledge widens and the roots go deeper so that later studies become more productive and profitable. Fresh fields are constantly opening up, and the older fields are yielding a stronger harvest. The retrospect and use of knowledge already acquired are as valuable in organizing the whole range of experiences as the forward movement, and the two should be kept in balance in every big unit.

Simplification. — This review by comparison by which kindred topics, new and old, are brought together and wrought into one firmly woven fabric of knowledge involves no duplication. On the contrary it cultivates and enforces the strictest economy in the utilization of our mental resources. By steady progressive organization along the few chosen highways of thought and by a full allotment of time to comparison and reflective association, the simpler framework of world knowledge comes gradually into view, and the great things are seen to be the simple things. The quiet predominance of a few simple ground ideas, extending and enforcing their influence through the whole process of education, will liberate the child's powers and organize his whole world.

The close partnership of form and content studies. — In learning to read it is necessary for children to master the symbols and word forms and sentence structure of written and printed language. At the same time, by means of the oral narration of stories and by activities in and out of school, they are gaining a wide variety of experiences both of human affairs and of nature lore. Teachers have been much exercised in recent years in efforts to bring this first group of formal studies into full coöperation with the second group of experience and content studies. This problem of harmonizing form and content is present in all studies throughout the curriculum but is boldly prominent in primary grades. The important thought studies have been steadily pushing to the front and have now assumed the definite leadership in shaping the curriculum. The expansive enrichment of elementary studies

through literature, the fine arts, biography, geography, science, and the arts of life is a surprising achievement of recent years. The older curriculum gave predominance to the formal arts of expression, but the tables have been turned and now the more energetic, enriching content studies have come into their proper leadership. The deeper thought studies just mentioned furnish the main ideas as central strands of organization which we have been discussing. They supply the ground plan and framework of studies by furnishing the basal constructive ideas that steadily organize knowledge. As a result of this changed relation of relative importance, the form studies have been shrinking to smaller dimensions, and the system of tests and measurements is bringing them properly into still closer quarters, limiting them to the manifest essentials. But the problem of combining thought with form remains an ever-present and difficult task.

Intense activity in thought studies contributes to the mastery of forms. — Economy of time and effort in both teaching and learning rests upon a close co-partnership between thought and form, constantly acting and reacting upon each other. There are several ways in which the topics rich in thought contribute to a quicker mastery and better use of essential forms in reading, spelling, and language. Teachers have worked this problem out in several ways: First, the strong thought studies put the mind into such an intense activity that there is needed mental strength to do two things at once, to master both thought and form. The heat of strong thinking welds thought and language together far better than concentration of attention upon

mere forms of expression. In listening to an interesting story of Robinson Crusoe or of Robin Hood, children will unconsciously absorb words and phrases and whole sentences, and in reproducing it will express themselves far better than when laboring at some forced and formal language exercise. This fine experience in combining thought and language repeats itself in the whole range of engrossing topics which we have been discussing under the name of central units. This striking fact of the absorption of thought and language together is not stated here as anything new but fortunately as a happy commonplace in teaching experience wherever strong, rich thought subjects suitable for children are properly dealt with. Since this problem of combining thought and form is present in all studies and in almost every lesson, the economies that can be practiced (the saving of waste) by a wise use of stimulating thought studies are almost without limit.

The energy supplied by distant aims. — The enriching content studies, in the second place, fill the child with generous impulses and forward-pushing ambitions toward the widening of experience and knowledge. They shape up the higher standards of achievement and brighten up those more-distant goals which help to keep up one's courage and steadfastness in the midst of strain and effort. Nothing is more important or economical than setting up these distant aims and supplying the energy required for achieving them against opposition and difficulty. Among these difficulties is the labor of mastering the formal or instrumental arts. When the student has gotten into vigorous action along the higher lines of thought and discovers that he needs the equip-

ment of the instrumental arts of expression, he is more willing to devote effort to their mastery. For the development of the thought studies themselves is narrowly conditioned by the necessity of formal and accurate expression.

SUMMARY

The present course of study is made up of an immense collection of poorly organized materials. Economy in the selection and arrangement of these materials is the crying need.

The gradual unfolding of a few fundamental thoughts embodied in large units of instruction would clarify the whole vast field of knowledge. In contrast to this, immense waste results from half-way learning a multitude of disconnected facts.

Ideas growing and expanding naturally into big units of study are the sole organizers, and the more comprehensive the scope of such ideas the fewer are the centers of organization. Economy in knowledge-getting demands this concentration at a few points and along a few lines.

The only way to abbreviate the course of study is to expand its big topics; in other words, to give full scope to a few organizing principles.

The elementary course of study has a limited store of inexhaustible gold mines where the treasures of the earth have been collected. These are the places to dig. But children should not wander at random prospecting over all the desert and waste places. The multiplication of small topics and the endless stringing together of commonplace facts amount to extravagant folly.

Curriculum makers must do some broad-minded, comprehensive thinking, casting aside for the time being a great mass of trivial and minor details.

When the centers of organization have been once determined upon, they must be copiously enlarged. They should be allowed to monopolize the whole field of knowledge, pushing the minor topics into the background.

The economy of this plan is shown in four leading points:

1. The complete elaboration of a large teaching unit preserves the balance between facts and ideas — between the material and spiritual — between body and soul in matters educational. The

failure to maintain this wholesome balance disjoins and weakens the whole scheme of education.

2. An important idea once mastered runs into a rapid interpretation of a whole series of later studies. We are in search of these master keys which will open many doorways into world knowledge. These master keys have been discovered in the fundamental types.

3. A succession of type studies continuous in one line of thought provides a basis for constructive organizing reviews. Such review comparisons consolidate knowledge along the chief highways of thought, and they would save the children more than a year's time. The present plan of oft-repeated static reviews of the same round of topics from grade to grade is a tedious and deplorable waste.

4. The elaborate treatment of these masterly units of instruction produces naturally a binding correlation between the chief studies and abolishes the old artificial separation of studies. This plan gives a mutual interaction among all the studies and a constant review by each of materials in others. The formal and content studies are likewise so closely correlated that each group reinforces the other.

The fundamental ideas in big topics are the curriculum builders on a simple, economical, comprehensive plan.

QUESTIONS FOR STUDY

1. Explain what is meant by "broad scatteration" in studies. Give the antidote to this tendency.

2. Why has the need for larger units of instruction been overlooked?

3. In the organization of studies, what should be the relation between life in the school and life outside of the school?

4. On what kind of framework should the curriculum of the school be built?

5. Suggest a plan for the elimination of waste in studies.

6. Show in what way literature is an exception among studies.

7. How are important and trivial matters dealt with in the present plan of studies?

8. Discuss the objections that are made against large units of study.

9. Explain and illustrate the cumulative value of a growing idea.

10. Explain the parables of the mine and the farm.
11. In large project studies show the relation between facts and ideas.
12. Show what provision can be made for the rapid interpretation of topics in later studies.
13. Explain the difference between half-learning and complete learning of topics in their effects upon habit.
14. Give a demonstration of how one of the master keys of knowledge works.
15. Upon what conditions is the serviceableness of knowledge dependent?
16. Describe the prevailing plan of reviews with its merits and faults.
17. Outline a plan of a more profitable review of studies from year to year.
18. Why has the fundamental type been overlooked as a basis for organization of studies?
19. How can continuity of thought extending through the entire course of study be provided for?
20. Show how new, fresh, and invigorating studies can be provided in each grade.
21. Can content studies and formal studies be made mutually helpful, and how?
22. For what kind of scholarship should the elementary school take a stand?

CHAPTER VIII

THE INDIVIDUAL AND SOCIAL DYNAMICS OF SUCH ORGANIZATION

The energy released and set to work by projects. — A boy digging for fish bait or his father preparing fish nets for a catch has an adequate motive for effort. In planning and laying the first Atlantic cable, Cyrus W. Field encountered difficulties and failures but pushed resolutely on with unabated purpose, confident in the value of his project. The project that looks forward to a definite and well-conceived result has an unrivaled capacity for drawing to itself and for organizing the particular materials and resources which contribute to this end. A project wisely conceived by some daring soul like Columbus holds within itself a rational energy that not only brings to its support just the required instrumentalities but also supplies the momentum that breaks through opposition. There is a sort of titanic energy involved in the execution of large social and industrial projects that brooks no interference and pushes on to full achievement. The building of the first Pacific railway was a notable illustration of speed and energy in successful construction. Projects like the Cologne Cathedral sometimes display a persistent and long-lived energy. It was six hundred years in building. A university grows and organizes its resources with ever-widening influence through years and

centuries. David Livingstone spent a lifetime in getting well started in his project of opening up central Africa. Decades and perhaps centuries will be required to develop and reap the fruits of his initial efforts. Hannibal's historic march from Spain across the Alps to attack Rome was backed by a determined energy. Urged by a powerful impulse he displayed an unrivaled intelligence and persistence in enrolling and directing the men and resources necessary to the execution of his purpose. In professional and business enterprises which constitute a very large proportion of the world's progressive, essential work, this prodigious long-lived energy in the pursuit of definite plans is the basis of achievement. Banking houses, like the Rothchilds, and commercial enterprises, such as railroads, grow and expand far beyond the lifetimes of their founders. The initial energy manifested in a social project like that of the Red Cross Society constantly renews itself and enlarges its scope into a continuous and unending series of benefactions. Large benevolences and social projects that answer well the needs of society grow into institutions and acquire an almost endless lease of life. In peaceful times society is thus capable of becoming a living, growing, improving organism.

Energy in municipal projects. — The growth of a modern city is simply the expansion of a group of municipal projects, centering around and growing out of the needs of the developing community, such as rapid transit, water supply, parks, and fire protection. These projects perpetually expand with the city's growth and necessities. A powerful coöperative social spirit is required in such projects, constantly alert and

active, to ensure to any growing city the wholesome development of its community life. The real worth and character of a community are best expressed in the kind of projects wisely undertaken and carried through to final achievement. This persistent, invulnerable energy which is the life principle of personal and social projects is the reconstructive force which should be put to work in reshaping the curriculum. These typical life projects will now be examined with a view to discovering their sources of strength and predominance as organizers of knowledge for school purposes.

The genetic impulse. — The forces that give birth to a project and launch it upon its career provide a strong *motive* for effort. Observe for example the origin of such a project as the *Old National Road*. It sprang out of a keenly felt need for easier and quicker communication between the Western settlers and their old friends across the mountains. Again, the Constitution of 1787 was framed by men who were under a powerful compulsion to find relief from a governmental chaos that was steadily growing worse. Still further back in our history, the voyage of the Pilgrims in the *Mayflower* was undertaken by a zealous people escaping from unbearable conditions and hoping for a great relief. The Suez Canal and the Brooklyn Bridge were public projects imperatively called for by pressing needs. They were a direct outgrowth and expression of economic forces that had to be considered. In such enterprises whatever aid can be supplied by science or invention or previous historical experience is called into service and absorbed into the scheme. For example, in the preliminary surveys and plans for the

Panama Canal and in the subsequent problems of construction, nearly all the modern scientific inventions and resources as well as civic and industrial organizations on a large scale were drawn into direct and combined service. Such projects demand a fundamental knowledge of the scientific facts in their life connections and a close adjustment of reasoning processes to the practical needs. This renders the typical life project an almost perfect example of sound thinking under the stress of practical compulsion. The genetic and dynamic force that runs the machinery of thinking is here at its maximum. What is called motivation in such cases is grounded not on artificial stimuli but upon the urgencies of life itself. All these are examples of the life energy at work in practical social projects. Why not take up these projects bodily into the school program and give them the right of way in organizing knowledge?

Projects demand a severe form of reasoning. — This historic, natural evolution of the project lays down a more substantial basis for the right organization of knowledge than the school heretofore has furnished with its artificial groupings and its systematic outlines. A project like the laying of the first Atlantic cable is subjected to sharper and more decisive tests than those usually applied to reasoning in formal school subjects. A practical project, developing under the life strain, meets with more unexpected contingencies than the problems set by the schoolmaster. Real projects are more exacting and uncompromising in their demands for foresight and reflective thought. The successful execution of such plans requires a masterly control and organization of the whole range of essential facts. A

military project like Burgoyne's invasion, which developed under the pressure of complex, widely scattered, and unstable forces, calls into play a high degree of comprehensive and flexible thinking. The early successes of Burgoyne on Lake Champlain and quick-following reverses as he moved southward to the Hudson demand a rapid shifting and readjustment of thought. The maneuvering and fighting qualities of the British generals, Burgoyne, Fraser, Baum, and Breyman, are estimated and compared with those of the American generals, Schuyler, Warner, Gates, Stark, Arnold, and Washington. The larger coöperative action of the American leaders is contrasted with the failure of the British in combined effort. The far-reaching results of Burgoyne's surrender, first, in its effects upon the American Congress and people, second, on the British Parliament and politics, and, third, on France and other European countries are clearly thought out. The consequent reorganization of the world forces combined against England gave a new aspect to the remainder of the Revolutionary War. A detailed, comprehensive, many-sided study of one such military campaign dealing adequately with the main forces that were operating and decisive in producing results would exhibit the keen competitive versatility of thought required in such difficult practical projects. Why not appropriate these projects and incorporate them into the curriculum?

The strong historic sequence. — Of all studies history furnishes the standard examples of the genetic or historic evolution of projects. It deals with the beginnings and causal connection of events in the process of

development — the emergence of these projects out of social causes and life forces. The history of a project like the annexation of Texas gives the whole series of stages through which this strong purpose was carried to success. The Erie Canal was such a motivated far-seeing scheme, planned and executed through a long series of steps in the face of stubborn political opposition and of constructional difficulties. Its later enlargement by means of vast and expensive reconstructions is a continuation of this energetic historical sequence. The deeper-lying relations between events and the unbroken sequence of cause and effect through a long process demand close, reliable thinking. A complete and connected study of the Plymouth settlement reveals this deeper logic of sound practical thought. The Pilgrims with gritty determination and a high faith were working out a long-developing project amid the rude, wild surroundings of the Plymouth settlement. A scant and superficial survey of the main facts is wholly inadequate. A full and sympathetic knowledge of the whole range of their hard-pressing experiences kept up through a period of years is the only basis of right judgment on the character and achievement of the Pilgrims. Many instances can be given of this logic of events, this grinding out of results between the upper and nether millstones of experience. The initial struggle for existence in the early history of Boonesboro, Kentucky, and again the building of the Chicago drainage canal are enterprises of the severe project type which, in a proper elaboration, enable us to sense the difficulties out of which such undertakings are born and fostered and developed.

The main institutions that we cherish in state and church and society had their beginnings in these outcropping historic projects which grew up and established themselves under such laborious, strenuous conditions. To reconstruct these historic projects from their doubtful beginnings, hard limitations, and serious hindrances and to trace the slow emergence into success will furnish examples of organization based upon a progressive dynamic movement.

The logic of close-fitting practical events. — The natural evolution of projects enforces this keener experimental penetration into the inexorable logic of practical events. It is frequently remarked that we get a real understanding of the present through our knowledge of the past. But this is true only in those historic achievements, in the intensive, connected study of which we have endured the pains and penalties imposed upon those who were hardy, struggling pioneers and who stubbornly worked out the problems. As learners we must partake measurably of the rough and raw experiences of those who were explorers and road builders, who opened the first wilderness paths as did La Salle, Boone, and Frémont. The logic of events based on the stringent law of cause and effect is a sharp corrective of faults and a severe punisher of mistakes in thinking. Our condensed bookish outlines of topics give no notion whatever of this life struggle against opposing odds, of this close-fitting sequence of facts in business or economic or governmental projects. The early, crude beginnings of our United States Post Office and the long, slow series of improvements by which it has been developed to its present vast scope

and efficiency illustrate the close thinking required in mastering such a continuous historic evolution. An enterprise that develops through its natural and inevitable stages in rigid conformity to wisely directed effort exercises a powerful pull upon the interest, attention, and thinking capacity of the student. He builds up a consistent and intelligent sequence and organization of knowledge.

Fiske's "**Critical Period of American History.**"—Some of the best historical writing, in books lying just outside of the prescribed course of study, deals with important historical projects in this fruitful thought-stimulating manner. Fiske's "**Critical Period of American History,**" which deals thus intensively with the disrupting influences at work in the colonies, which forced many leading men to the conviction that a stronger central government was necessary, is a connected setting forth of this weighty governmental project. When history is dealt with in this pragmatic fashion, grounded in a deep practical scholarship dealing with progressive events and expanding into powerful units of study, it sets up a high standard of constructive organization.

The genesis of projects in geography and science.—This keener onset upon knowledge, based upon the strong genetic impulse, may be fully shared by both geography and science. Many of the most important projects in geography and science naturally take on this constructive historic treatment. The expensive river and harbor improvement of Glasgow not only explains the present commercial and industrial importance of Glasgow but is also a striking chapter in the historical development of commerce. This improve-

ment was begun in a very simple way more than a hundred years ago by dredging and deepening the shallow places in the Clyde River. In its progress it exhibits a definite historical series of aggressive improvement projects in deep dredging and harbor excavation. It produced a steady increase at Glasgow in world commerce and developed a vast shipping interest. Another instance is the construction of levees along the banks of the Mississippi River to control the floods and protect the cities and rich lowlands of the flood plain. The present levee system is the result of a long series of river-improvement projects, historically developed and looking well to the future for greater results. This topic should be treated as a developing project, thus giving it the impulse and momentum of a great social and economic enterprise in which man has undertaken to get control for his own benefit of some of the larger forces in the field of river geography. Such a developing project is never a bald exhibit of mere results; in short, it is not static. It develops through a strong genetic sequence into a series of problems. In the teaching process every geographic project should begin with the inception and grow into a developing history of the project. Otherwise the natural, logical order of thinking and of solving problems is not only interfered with but nullified. The Salt River project for reclaiming 240,000 acres of arid land in Arizona is a complete demonstration of just such a practically organized life project. In such a case geographic knowledge organizes itself under the powerful impulse of a genuine civic and social purpose. It is a strong contribution of the project idea in teaching that it

reveals this driving energy of the original historical movement in large teaching units. History thus takes on an important and intimate relation to several other studies since they also are absorbed into this historic, dynamic method of treatment.

Scientific projects. — In applied science, for example, the problem of getting rid of typhoid fever in town or city is a scientific community project to be carried out in a series of steps lasting months and years. We have the histories of several successful projects of this sort. In handling one of these we may get the benefit of this strong community impulse for social betterment of health conditions in its historical growth. Modern society has been compelled to take up these municipal projects and scientific health problems, many of which have a state and national and even international scope. Among these may be mentioned the need for securing a pure milk supply in cities, how to get a sanitary municipal market, the quarantine of seaport cities, the antituberculosis campaign, the protection of children and women in factories, sanitary housing in cities. All such projects under life pressure generate a fund of coöperative social energy, and, as fast as these projects are absorbed into the school course, the school studies are receiving the powerful reënforcement of this combining, energetic, and social spirit. In contrast to this, one of the most serious faults of our old course of study is the static, unyielding inertia of its facts and knowledge materials, the almost total lack of incentive or of social impulse in the direction of wholesome, common enterprise. All real thinking must be forward-moving, propulsive, dynamic. These positive

dynamic elements are found in every project which is genetic or historic in its origin and growth.

The biographic impulse. — A project like the Erie Canal in which De Witt Clinton took such a leading part has also the merit of a strong biographical interest. De Witt Clinton is fighting against strong odds in working out his purpose. It is an absorbing personal enterprise pushing toward achievement. The difficulties and problems are not only concrete; they also bring out the immediate expression of individual force and strength of character. This deep concern felt for the success of an individual behind the project lends a vigor of thought which no other agency can contribute. The energetic person who undertakes a large, new project which is still doubtful in its issue finds many people skeptical and others strongly opposed. He puts into the scheme all his energy and mental resource and grows into the dimensions of a hero, as did Magellan. The part of history which engrosses the attention and imagination of young people is that which describes the projects undertaken and executed by masterful individuals who show force and flexibility of character, as George Rogers Clark in his campaign for the capture of Kaskaskia and Vincennes. With insignificant resources but with an astonishing strength of resolution he gathered an army, took these forts, conquered the Northwest Territory, and held it against the British till the close of the war.

Importance of biography. — In educational circles we have come to realize that biography at its best is the vital part of history, and more and more we are shaping our course of study in grammar schools and

even in high schools and colleges on this basis. Carlyle in his "Heroes and Hero Worship" and Emerson in his "Representative Men" have demonstrated the far-reaching significance of this personal element in history. Macaulay's biographical essays and Plutarch's "Lives" are in themselves classic demonstrations of this biographical interest. The biographies of Abraham, Moses, David, Elijah, John the Baptist, and St. Paul are conspicuous Bible examples. The heroes and makers of history are those marked characters who have undertaken and achieved important projects, such as Magellan, William Penn, David Livingstone, Florence Nightingale, Cyrus W. Field, Horace Mann, Sir Walter Scott, John Paul Jones, and Benjamin Franklin.

The project itself introduces a compelling motive, an energetic, purposeful effort. Now, when the project is reinforced by an engaging and striking personality, which throws itself vigorously into the scheme of action, as when Washington worked out his masterly project for concentrating land and sea forces around Cornwallis at Yorktown, we have an ideal problem for the child to deal with. In this combination of the project interest with biographical interest we touch the strongest center of influence in historical and other studies.

Strength and scope of American biography. — Whatever potential value the biographical project may have as applied to history is of special and pronounced value in *American history*, because our people in the gross and individually for three hundred years have been engaged in setting up and working out important and engrossing projects. The subjugation of an untamed

continent has opened up enterprises of every description. The pioneer explorers and settlers in carrying through their plans pitted strength and shrewdness against the obstacles and dangers of the wilderness. No other country in its early history had such an enterprising group of bold, resourceful leaders. They were explorers, pathfinders, Indian fighters, and founders of settlements. Later they engaged in road building; in the exploitation of forests and prairies; in mining coal, gold, and copper; in the construction of canals and tunnels and railways; in the bridging of rivers, the navigation of lakes and streams, the drainage of swamps, the planting and development of cities; and in the organization and development of business enterprises. Our people in the short period of three hundred years have worked out more imposing projects, conspicuous enterprises on a large scale of operation, than any other nation in a thousand years. This holds not only in large industrial and material interests but also in constitutions and government, in humane social organizations, in the expansion of church activities, and in the remarkable growth of educational institutions. In all these great enterprises, from the days of frontier settlements to the present, strong leaders of distinctive personality stand in the front ranks as representatives of the people, for example, Roger Williams, Anne Hutchinson, Oglethorpe, Robertson, Peter Cartwright, Andrew Jackson, John C. Frémont, Daniel Boone, George Rogers Clark, Captain Eads, Eli Whitney, Clara Barton, Frances Willard, Samuel F. B. Morse, and a host of others.

Moreover, if children are to learn how to adjust

themselves to the modern world, these very projects offer the best channels of thought through which to enter into this domain and thus master the varied institutions in our present social order. For they all began in just such projects and developed out of them into the present order.

Geographic projects are biographical. — Again the biographical impulse may contribute its strong reënforcement to geographic and scientific studies quite as effectively as to history. Captain Eads' project for cleaning out the mud-choked mouths of the Mississippi and thus opening it to world commerce is not only a story of strong personal interest in high achievement but at the same time an important type and center of organization in geography. His construction of the St. Louis bridge is of similar import. Cyrus W. Field's persevering efforts in laying the first Atlantic cable is a combined biographic and geographic story. Powell's adventurous journey with a small party of men down through the Grand Canyon of the Colorado is a thrilling geographical excursion. Peter Cooper's supervision of the construction of the Croton aqueduct for New York City's water supply is the same combination of biography with local geography and community welfare. One of the best geographic stories is the tale of Livingstone's explorations in central Africa. A significant topic in geography and history is Peter the Great's founding of the city of Petrograd, and equally valuable is Francis Joseph's reconstruction of Vienna. To understand a bold railroad enterprise, study the biography of a great railroad builder, like James J. Hill of Minnesota. To understand gold mining follow the adven-

tures of a prospector and gold miner in Colorado. Mr. Dalrymple's project in developing a large wheat farm in Dakota gives us lively and lasting imagery relative to the wheat industry in the Northwest.

Science biographies. — In science likewise we have a group of almost thrilling biographies that introduce us in an admirable fashion to the discovery and use of nature's secrets and laws, for example, Watt's invention of the steam engine and Stephenson's application of it in the locomotive and railroading, Franklin's discoveries in electricity, and the marvelous work of his successors, Pasteur's investigations in bacteriology and their application to wine making, to the prevention of diseases of the silkworm, and later to human and animal diseases.

The story of how Gorgas cleared Havana of yellow fever and later got rid of yellow fever and malaria at Panama is a thrilling science tale. The personal stories of Kepler's and Newton's discoveries, the biographies of Darwin, Agassiz, and Hugh Miller, of Edison and Marconi, the life stories of Audubon and Thoreau — these and others illustrate the principle of biography superimposed on the idea of discovery and invention. No better gateway into the scientific field may be found than the interesting narrative of the scientist himself and how he pursued his projects of discovery.

Biography reënforces social projects. — In the biography projects, therefore, may be found a rejuvenation of interest and devotion to history, geography, and science among young people, and these efforts properly selected and treated become growing centers of organization and clear types of the leading principles

as applied to modern social and industrial life. Another advantage of biography as a direct contribution to economic and social projects is the strong drift toward community betterment, toward social enterprises of every kind, as shown in these biographical narratives. When Peter Cooper built the Cooper Union in New York City and carried out his life project of helping the working boys and girls of Lower New York, he was devoting his wealth and personal influence to a large scheme of social betterment. In this case the individual biography becomes the representative of a liberal social idea. Johns Hopkins, by founding the great hospital at Baltimore, was contributing his personal resources to a public need. George Peabody in bestowing his wealth upon the needy cause of public education in the South at the end of the Civil War was merging his personality in a broad social good. When Roosevelt was police commissioner of New York City, his forcible leadership was directed towards the improvement of political conditions.

Projects are social. — All great projects are essentially social in their bearings and influence. In this sense every worthy biography is the personal embodiment of an important social idea. Morse in building the first telegraph line, Fulton in making a success of the first steamboat, Luther in his translation of the Bible, Howard in his plan of prison reform are examples. Important biographies are representative or typical. The individual is merely an interesting agent or means of demonstrating the value of some social project that may then spread its useful influence broadly in society.

This quality of biographical leadership finds striking illustrations in our modern commercial and educational life and among scientists we have a turn for the practical. We need only to mention such men as Ezra Cornell who founded Cornell University, Vassar of Vassar College, Horace Greeley, Henry George, Robert Morris the financier of the Revolution, Eli Whitney, Samuel Slater, Bessemer, Abbe, and Edison. These men had their individual projects which involved, however, schemes of general social improvement. The aim of education most commonly accepted in recent years is that of socializing the individual and of fitting him to the economic and social environment.

Biographies better than legal codes and constitutions. — It is a proof of the labored dullness that has spread its blighting influence over our school studies that life-giving biography, so strong and forcible in its effects, has been so much neglected in geography and science and, until of late, even in history. In civics we are still droning over the dull generalities of governments and constitutions and taxing power and are neglecting the men who made governments and constitutions and taxing systems. The life and deeds of Moses are far more instructive materials of education for young people than the system of laws which he codified. The lives of the men who made the Constitution of the United States are far more interesting and instructive to children than the Constitution itself. They developed it largely out of their own experiences and needs in dealing with government. No instrument of government can have much meaning unless we see clearly the historic background out of which it

arose, the men whose experiences and ideas were the materials out of which they constructed it.

A superior class of biographies is required. — This reënforcement of history, geography, and science by the vivid portrayal of strong leadership in men of achievement opens the way to a vital strengthening of the curriculum. Biography plays powerfully into the genetic thought movement in actively developing projects. Such results, however, will not spring from feeble, poorly constructed biographies (mere praise of great men) or from shallow moralizing upon their virtues. Superficial, eulogistic stories of men and women will not serve the purpose. Well-chosen and well-wrought biographies of strong intellectual fiber should stimulate thought and reflection in children. Such stories should be spiced with anecdotes and sharp portrayals of personal qualities. The deeds of men of action should be set forth in strong language, adequate to express fitly and portray fully the deeper experience of a personal nature. Big, worthy tasks of individual enterprise and of social service should be clearly exhibited in their hard-earned, struggling development.

A strong handling of biography. — The severer problems and difficulties of personal experience offer a chance to appreciate some of the sterner trials and achievements of life. The problems set up should stimulate reflective thinking. This stronger handling of significant biography cultivates breadth and tenacity of mental energy. The many-sided and versatile autobiography of Benjamin Franklin suggests the intellectual quality, richness, and energy of thought that ought to be found in biography appropriate to older

school children. There is a stimulation to sound thinking and a breadth of survey over larger areas of experience in such a biography that cultivates at a high tension the real art of thinking. To be sure, such well-wrought biographical narratives are, like all best things, rich and rare and not to be had for the asking. But much good American biography is already available, and an intelligent demand will call forth still more. The best talent among writers should be discovered and drawn upon to produce this high quality of invigorating biographical story. Fortunately American history has produced a strong array of worthy characters fully deserving of such biographical honors. The abundant source materials are within reach which will give the full, strong setting for these life histories. The best sources of suitable information should be drawn upon copiously and grouped artistically to furnish out these hero tales from real life and to give them their deserved places of honor in the happy yet serious instruction of children.

Scant use made thus far of best biography. — The schools are now ready to receive and utilize these choice narratives as fast as they can be elaborated into complete stories. But our condensed textbooks and usual outline courses of study, until lately, have been almost oblivious of the existence of such powerfully educative material. They relegate all such matters to the supplementary and library books which the majority of schools probably do not possess. They are still dealing out the old conventional platitudes and meaningless commonplaces which have been the stock in trade of mere bookmakers for a long time. The

constantly increasing number of supplementary readers in geography, history, and science is a clear proof that the people generally are tired of this long-drawn-out misery of dullness. The supplementary readers are rich in descriptive matter and should be still further improved by focusing and organizing their illustrative material more consciously upon the central projects of American history and geography.

Why should not these better organized and more educative materials be directly incorporated into the textbooks and not stored away in libraries and supplementary books which for the majority of schools have scarcely an existence? Even the majority of teachers are not well acquainted with this better class of stimulating thought materials, and they never will be so long as our present system of inferior textbooks prevails. A strong effort should be made to transform our textbooks of history, geography, and science so as to furnish a lively and rousing treatment of the most important projects and biographical stories.

A worthy task for specialists. — One of the main difficulties in our present revision of the curriculum is to get a reorganization of this fuller descriptive and biographical information around the central types. Why should not our specialists in science, geography, and history, whose scholarly studies have given them a full command of these abundant sources, wake up to the situation? They are particularly qualified for bringing together and organizing for school use this strongly stimulating instructional material. Instead of framing lifeless textbooks of the stereotyped order, why not give themselves the joy of producing big

graphic and biographic projects dealing with national and world affairs so as to arouse the interest of boys and girls and thus to set them *thinking*? This is the present need of the school compared with which most other things are trivial.

How to forge the connecting link between child and society. — When Samuel Morse in 1844 sent his first telegraphic message from Baltimore to Washington, he gave the first full proof of the success of his project of sending long-distance messages. He had been working for years on this project, and the sending of this first message was a great personal triumph. But his personal success was the mere beginning of a widespread benefit to the nation and soon to the whole world. A full biographical account of Morse's experiments leading up to the successful use of his invention gives a strong link of connection between the success of his personal project and the larger interests of society which he served. Whenever a private individual works out a project which is then transformed into a scheme of large social benefit, the link is forged between the individual and the social whole. Thus the individual biographies of inventors, discoverers, and leaders of progress are merged into the larger enterprises of cities, of states, and of nations. Strong characters in history are chiefly distinguished by the fact that they are exponents of some significant social idea or enterprise, as was Florence Nightingale, when she boldly entered a new field and, serving as a nurse, organized hospitals for the care of sick and wounded soldiers on battlefields; or Peter Cooper who systematically saved up his great fortune through a long

period of years for the purpose of founding the Cooper Union in Lower New York; or William Penn whose individual fortune was expended in founding a colony for the protection of the Quakers and of others harassed by religious persecution.

Social enterprises. — In the educative process of gradually inducting children into the complex machinery of industrial and social life the biographies of statesmen, of inventors, and of industrial leaders are accordingly of superior value. The personal stories of their individual achievements, while interesting, instructive, and inspiring, lead directly into larger social problems which children are called upon to understand. One after another the strong social instrumentalities operating around the characters are brought to the notice and made clear to the understanding of the child by a full demonstration of typical projects which are in fact biographical exploits. In this manner, by virtue of the growing personal interest in the undertaking, the reader identifies his knowledge and his impulses with the larger enterprises of society itself. Through this gradually increasing acquaintance with society and its purposes he becomes an intelligent judge of social conditions and an interested, coöperative worker in local social and larger world affairs.

Society demands this social enrichment. — The great social and economic agencies of society, as fast as they become intelligently interested in school affairs, are strongly demanding this readjustment of the school course to social needs, this intensive enrichment of school topics in the combined interest of children and of society. The stirring biographies of leaders in

projects for social betterment are among the most effective, well-chosen means of accomplishing this piece of educational work. They supply the rich content and inspiring motive which draw the young directly into outside social problems and life interests. Perhaps one significant reason why teachers are leaving the schools is that they, like boys and girls, wish to break out into a world where things of consequence are taking place. For the benefit also of teachers the school requires a closer contact with life in its active business and industrial phases. A dull, lifeless course of study strips the teacher of his proper incentives, and incentives are vital in any profession. If we want lazy, sluggish teachers in the schools, all that is necessary is to prolong the present misery of dull monotony in the school studies. The better class of teachers will make their escape out into a world of freedom and action. By intensive biographic and social treatment teachers themselves should share in world activities. Of all places in the world the school should be in lively contact with the energetic forces of life. We have been complaining much because children refuse to stay longer in the schools. But now we may discover that many of the best teachers refuse to stay in such a dull place. A dry and lifeless course of study is sure to drive the stronger teachers out of the profession.

A key to the social complex. — When Johns Hopkins bestowed his wealth upon the university that bears his name and also founded the great hospital at Baltimore, he was deeply interested in two private projects which at the same time looked toward the public benefit.

These two private projects have developed into institutions whose good effects have been felt not only in Baltimore but in widening circles throughout the world in stimulating scientific and educational research and progress. When Horace Mann set out on his campaign for founding normal schools in Massachusetts eighty years ago, his personal interest was strongly involved in this particular scheme, but he was also setting in motion influences which have resulted in an extensive system of normal schools and teachers' colleges which have become the bulwark of our educational system. Booker Washington in starting the school at Tuskegee was engaged at first in a small private enterprise which under his personal leadership developed into a demonstration of negro education which has already had a far-reaching influence upon the negro race and has become a source of hope and inspiration for a whole nation in dealing with the race problem. Such private undertakings are in reality the response of individuals to powerful and insistent social and educational needs. They are distinct manifestations of the identification of private interest and initiative with larger community enterprises.

The social-educative process based on projects. — The typical life project, undertaken at first by the individual, is environed and intimately tied up with broader social and economic interests. Indeed it originates in a strongly felt social need and is a reorganization of forces to meet this emergency. The study of these projects as they spring up, grow, and organize life activities in society is the most direct and effective teaching method for mastering the machinery of the

economic and social world. The social system *en masse* is too complex and overpowering for the child's intelligence. But the single project, impersonated by a marked character and worked out in society as a concrete demonstration, is the key that unlocks the social complex. As soon as the typical character of a project is detected, by applying its lesson to other kindred projects, its far-reaching scope and interpretative value are made to appear.

The first railroad built by Stephenson in England was just such a project. As it grew and developed its successful method of handling traffic, other roads were built and eventually our complex rail system was evolved. Our present steamship navigation is the lengthened shadow of the first steam vessel. The present industrial processes and institutions in society were first invented or thought out by individuals as single projects and became in time the standard modes of economic and social procedure. The progress which the world has made can be effectively demonstrated by working over again the historic projects, and the immediate present can be understood by tracing the development of the old into new projects as fast as modern needs require. To immerse the child's mind in the best historic projects which have developed into our present institutions and to keep his thoughts moving intelligently in these channels is a wise direction of the educational forces.

The social, coöperative instinct strong in children. — The child is by nature a social spirit and responds at once to the social stimuli. The ambition to serve in social enterprises is spontaneous, and the impulse to

follow active, brainy leaders in successful projects is instinctive. The motive to participate in common action is one of the strong forces in human nature and when cultivated in right ways is of untold value to society. Coöperation in common projects is the fundamental need in every community, city, or state. In no other way can the community live and thrive. By an intensive study of these social projects children are drawn into full sympathy for such enterprises and at the same time are becoming intelligently acquainted with the forces at work in helpful movements. Franklin's life as described in his "Autobiography" is a strong stimulus to social spirit because he engaged so freely in a great variety of beneficial projects of direct service to the community in which he lived. He remarks also that in early life he read a book on projects that set his mind to work in this field and influenced his action in later years.

Results of cultivating the social impulse. — The bent of mind toward working out useful projects, if it could be encouraged and fostered in the schools, would be of priceless value. It would be impossible to measure the contribution of such an educative procedure to the public welfare. It would be a consummation of what education could accomplish under happy auspices. It would produce a complete reconciliation and harmony between the impulse for activity of the growing youth and the forces and institutional activities at work in the outside world. The educational processes and the materials of study in their true organization would be those of life itself. When children pass from the school into business or trade or profession,

there would be no break but a natural order of developing experience.

A complete experience — Frémont. — Frémont in his second exploration of the Western mountains found himself and his party of twenty-five men in mid-winter on the east side of the lofty snow-clad Sierra Nevada range. From solar observations taken Frémont knew that only seventy miles distant on the west side of this high mountain wall was the ranch of Captain Sutter on the Sacramento River. His men agreed with Frémont to make the desperate effort to climb this mountain ridge and cross to the other side. Some sixty-seven horses and mules carried their baggage and equipment. The higher they climbed up the ridges, the deeper was the snow and the more rugged the steep, rocky slopes and the more bitter the cold. They made mauls and went ahead to break a path through the deep snow. Both horses and men gave out in toiling up the slippery slopes and often fell back. After three weeks of incessant toil they reached the higher levels where in places the snow was twenty feet deep. Mules and horses were killed and their flesh cooked and eaten. At last they stood on the summit of the snowy ridge, more than nine thousand feet above sea level, and looked down into the warm green valley of the Sacramento River. In their weakened and starved condition the rugged descent on the west slope was almost as toilsome as their upward climb had been. When at last the valley widened out and the green, grassy hillsides appeared and the hungry mules and horses could eat their fill, the men rejoiced that they had escaped from the Arctic snows and dangers of their remarkable

journey. Not a man was lost, but half of the mules and horses had been sacrificed in the mountains. Frémont had pushed ahead to Sutter's fort and returned with food and supplies. Great was the rejoicing when the men found themselves again in a land of plenty and comfort!

If the complete story of this remarkable passage of the mountains in midwinter is presented vividly and discussed step by step with children, they will share the difficulties and hardships and sufferings of the men. The brave persistence of the adventurers, meeting almost overwhelming difficulties, excites wonder and sympathy. Children get a new experience of what average heroic men can go through with, and they will rejoice in the final complete success of their efforts. Just to the extent to which the children have appreciated these severe trials and struggles have they shared in the hard experiences through which the men had passed.

Every topic a life experience. — When children finally complete such a narrative, they may draw a long breath and realize that they themselves have had a new experience with life. They have seen and felt things that open up a new world to them. Every important teaching unit which children are called upon to grapple with in their studies might be presented and discussed in such a way as to completely engross their mental energies and command their undivided thoughts and efforts. When they pause at the end of such a complete treatment of the topic and look back upon the whole subject, they will realize that they have passed through a great experience.

A course of study converted into life experience. — Why should not a course of study consist of a series of strong, vigorous, lasting experiences? To gain an actual and telling experience in some field of action is of far greater worth than any quantity of padded information. It is no small matter to transform school topics into rugged life experiences, to allow a child to construct in his own thinking a body of knowledge which, like the walls of the famous castle, is built of living stones, that is, brave warriors. If children's thoughts are kept busy with these strong developing projects, they are in the midst of the hurly-burly of life and are gaining genuine experiences accompanied by such knowledge as adheres to real life enterprises. The dynamic quality of such thinking as merges the individual interest into social projects is its chief virtue. Make this aggressive spirit triumphant in school studies and keep it actively at work organizing experimental knowledge along the main highways of human endeavor, and results will come in the form of organized knowledge and in developed individual and social character.

SUMMARY

By setting up an important and desirable end to be achieved the project arouses all the latent energy required for successful conquest.

The project is the most dynamic form that instruction can take because it awakens the strong natural impulse for definite achievement.

This vigorous motivation exhibits itself in all kinds of individual and social projects or enterprises.

These life projects carried forward under rigorous practical conditions are exacting in their demands on thought and action.

Projects worked out in their original genetic environments are best suited for incorporation into school work.

The biographic interest reënforces a great variety of these life enterprises, in history, geography, and science. American history consists of a great succession of individual and social projects. Out of these energetic projects have sprung our peculiar American institutions.

Biographical projects are the introductions to social and political enterprises of great moment. The individual interest merges in and is representative of the broad social interest.

These developing projects furnish the keys to our complex social organization and give children an intelligent introduction to the world of affairs where they may learn to live and act with discretion.

Fully developed and organized and rounded out in their actual life relations these projects give the nearest approach to real experience that the school is capable of producing.

QUESTIONS FOR STUDY

1. What is the source of the dynamic quality in projects?
2. Why should these larger projects be incorporated into the school program?
3. Discuss the peculiar quality of reasoning required by projects.
4. Explain and illustrate the *genetic* impulse in projects.
5. Show the value of the *social* spirit in projects.
6. Is it appropriate to call George Rogers Clark's expedition a project? Give your reasons.
7. What is the scope and value of the biographical element?
8. In American history what is the relation of projects to progress?
9. Give original examples of geographic and scientific projects.
10. What are the defects of weak biographies?
11. What are some of the qualities of a strong biography?
12. How is this biographic material to be brought into shape and made available?
13. In what way are biographical projects related to teachers in their professional work?
14. Show the relation of social projects to modern life.
15. Why should the project be called an educative process?
16. What is meant by a life *experience* in such studies?
17. Name a dozen of the best American biographies for children.
18. What is meant by the saying that the project is the *key to the social complex*?

CHAPTER IX

THE LOUISIANA PURCHASE — ONE OF A SERIES OF GREAT PROJECTS

Organization on a broader scale. — The argument in favor of the reorganization of the curriculum on the basis of large teaching units has been reënforced already by specific illustration in the case of the New Orleans project and of the land project described in the Virginia Plantation. But the scope of the organizing principle in one of these large units is so extensive and the variety of such projects so great that other illustrations, developed perhaps on a still broader scale, are needed. The full strength of a typical life project as an organizer of knowledge is best shown by tracing the development of the original project into later kindred projects distributed through the course of study. The growth of the same fundamental idea through a succession of large projects continuous through the grades and constantly enlarging its scope furnishes an example of organization on a broad scale.

Outlines are inadequate. — This serial development of basal themes on the stepping-stones furnished by big, central object lessons is our ground plan of organization. When this process of learning is dealt with as one continuous, developing thought movement, it shows four significant phases of expansion. But a mere logical statement of principles involved in such a

thought movement is inadequate. An expanded objective demonstration is required which shows plainly the four developing stages in the growth of such a project, expanding eventually into a series of projects or complete units. We might suggest this movement by giving brief outlines, but even elaborately prepared outlines are unsatisfactory, because they omit the descriptive content, the illustrative enrichment so essential and yet so difficult for teachers to secure. The life-giving elements can not be furnished by such an outline, and organization without such enrichment is merely predicated and not real. Outlines carefully developed on the basis of abundant source materials are excellent for those who make them. But a young teacher with nothing to work with but furnished outlines is in dire straits. To a busy teacher who is eager for good teaching material, somebody else's outline is little better than an aggravation.

Complete demonstrations of large units. — The would-be poet will not recommend himself highly to lovers of verse by preparing outlines upon which others are advised to construct great poems; likewise the ambitious orator will scarcely win applause by supplying outlines upon which others should indite great speeches. Such formal, dictated outlines have not the true ring of genuine performance. So-called educators should not be allowed to mystify teachers by furnishing shallow, pretentious outlines. It will be a great day for education when real thinkers begin to vie with each other in the effort to produce superior and genuine organizations of knowledge, complete in treatment and method. They should be adequate and suitable for

school use, what — for lack of a better name — might be called masterpieces in the teaching art, showing a complete exposition of the subject.

An effort to meet this need. — We find it necessary, therefore, so far as in us lies, to enter again into a rather full treatment of one of these large units so as to give an unequivocal demonstration of its scope and organizing capacity. There is a serious lack of such demonstrated organizations, and somebody ought to make the attempt. Until explicit examples of such intensive, scholarly treatment of large units of study are furnished, teachers generally are apt to make but little progress in their own efforts at organizing. They need illustrations. They do not comprehend what is meant by centers of organization or problem projects or natural sequence or intensive treatment.

Organize in a connected series of large units. — There seems to be little doubt that this effort to work out complete illustrative monographs on important topics is a serious and difficult undertaking in practical education. But they are much needed and the time is now ripe for a far simpler organization of studies on the basis of these central units as a means of escape from multiplicity and from a certain troublesome confusion among studies. The proposal now is to simplify knowledge by grouping its elements around a few basal centers of organization. With each advance into the fields of knowledge these central units should be connected into progressive thought movements continuous throughout the course. Any important typical project is one link in a chain of related projects stretching longitudinally through the course.

When properly developed in sequence these related projects represent in combination the organization of extensive knowledge along the developing course of a fundamental constructive idea. The topic selected as the first center of organization is the purchase of Louisiana during Jefferson's administration. It was a government project and one important stage in the steady movement for territorial expansion which is a marked feature of American progress.

THE PURCHASE OF LOUISIANA

The causes leading up to the purchase of Louisiana include a series of great events involving the United States and several of the large nations of Europe.

The French, originally, by pushing west along the Great Lakes and south along the Mississippi River, had owned and occupied by forts and settlements the whole eastern half of the great valley. But when the French lost Canada in 1763, the English naturally came into possession of all this territory east of the Mississippi except Florida and New Orleans.

The westward pressure of the pioneers. — With the close of the Revolution the thirteen colonies came into the ownership of the Northwest Territory, and England in turn was shut out. By the beginning of the nineteenth century (1800) the westward-pushing pioneers had forced their way into the Ohio Valley and were building up strong settlements (the basis for new states) from Alabama to Illinois. As these rugged and powerful pioneers moved westward, driving back the fierce Indian tribes, they were certain soon to cross the Mississippi into the still greater West. Being shut

out by the Allegheny Mountains from the Eastern states and finding it almost impossible to ship their heavy products over the long, rough mountain roads to Eastern markets, they turned their eyes toward the mouth of the Mississippi River as the natural and only outlet for their products. It was so easy to load flat-boats with bacon, grain, tobacco, and whiskey and send them floating down the rivers to New Orleans, whence they found their way in ships to the Eastern cities, to Europe, and the West Indies. The conviction grew powerful among the Westerners that they must have the mouth of the Mississippi and thus secure a safe market in that direction for their goods.

Spain in control. — But Spain owned New Orleans and all the Louisiana country, with all the region west of the Mississippi. Trouble and war were almost certain to arise between the United States and any country that held the mouth of the Mississippi. At this time Spain was one of the powerful nations of Europe, owning Florida, Louisiana, Mexico, and nearly all of South America except Brazil.

Danger from Napoleon. — But in 1803 Spain had traded Louisiana to France, and Napoleon, the most powerful ruler in Europe, was planning to send out armies and settlers to build up a great French province in Louisiana. With his remarkable energy and success Napoleon threatened to destroy the prospects of the Western settlements.

At this critical moment came an unexpected opportunity to purchase the Louisiana territory for the United States. In the midst of his plans for building up a powerful French empire in Louisiana, Napoleon

found that a war with England was rapidly approaching. He was suddenly called upon to make great preparations for an invasion of England, and this required large expenditures. At the same time a strong French army sent to San Domingo to suppress a rebellion of the negroes led by Toussaint was almost destroyed by yellow fever and by Toussaint's resistance. This strongly suggested to Napoleon the difficulty of sending armies to America.

Napoleon's offer. — In the meantime President Jefferson had sent envoys to Napoleon to try to purchase New Orleans so as to secure the mouth of the Mississippi for the United States. For a long time the American envoys could make no headway. But pressed by his threatened war with England, Napoleon suddenly changed his plans and suggested that he would sell New Orleans. Livingston and Monroe, our envoys in France, were authorized to offer two million dollars for New Orleans, but they were completely surprised by an offer of Napoleon to sell the whole of Louisiana for twenty millions. This was more than they had bargained for and more than they wanted. They didn't know what they could do with such an immense territory. It would be like an elephant on their hands; it would at once double the size of the United States. Besides, Jefferson did not believe that he had any right according to the Constitution to purchase new territory. As a close-construction Democrat he did not think that a President should do anything not expressly granted by the Constitution.

Jefferson knew also that the people of the United States and especially the Westerners were determined

to have the mouth of the Mississippi River even if they had to go to war for it. Now was the chance to get it without war, a chance that might never occur again in the lifetime of the Nation. The American envoys were considering these things, and they gradually enlarged their minds to take in the bigness of this purchase. Finally, in April, 1803, they decided to take the responsibility and completed the agreement with Napoleon to purchase Louisiana for about fifteen million dollars. It may almost be said that Napoleon forced them to take the whole of Louisiana, although neither the envoys nor the President desired it. This shows how little even great statesmen at that time appreciated the value of the Louisiana territory. Napoleon said that it would be of no advantage for him to own the rest of Louisiana unless he could control the mouth of the Mississippi River.

The purchase. — When the news of this offer reached America, it aroused much excitement and discussion. There was strong opposition in Congress against paying out such an immense sum of money for a region at that time unexplored and very little known. The President felt compelled to approve of it although contrary to his principles. Congress passed a bill ratifying the purchase and appropriating the necessary money. In November, 1803, the transfer from the French to the United States was formally made at New Orleans, and the American flag was raised. The taxable property of this region to-day is valued at many hundreds of times the purchase price.

This new territory contained nearly a million square miles or about three times as much as the original thir-

teen colonies. The Northwest Territory, including the five states north of the Ohio River, which fell to the United States at the close of the Revolution included about one fourth as much land as the Louisiana territory, or 248,000 square miles. At the present time the Louisiana territory, comprising the major part of thirteen states, has a population of 15,000,000 or about three times the population of the United States in 1803, the time of the purchase. What its population may be in another hundred years we can hardly estimate.

The historical influence of this vast cession of territory upon the Union and its future growth makes this purchase one of the most important events in American history. The whole Mississippi Valley was now destined to be occupied by one nation. Even now more than half the population of the United States is found in this valley. After taking possession of the country as far as the Rocky Mountains, it was almost certain that this vigorous Yankee race would push on to the Pacific shores and thus occupy the whole territory later contained in the United States. There was no race to the south or to the north that could check the westward march of this strong people.

Lewis and Clark. — At the time of the purchase this region had a very small population, mostly in Louisiana at or near New Orleans, about 50,000 in all, including a few French villages like St. Louis farther up the river. This region, as a whole, was but little known, a few exploring parties and trappers having passed across its plains or along its river courses. The greater part of it was wholly unknown.

As soon as the purchase had been settled, President Jefferson formed a plan for exploring this vast unknown country which had so suddenly and unexpectedly fallen to our share. Two young men, friends of the President, Meriwether Lewis and William Clark (a younger brother of George Rogers Clark), were put in joint command of a small exploring party which was to make its way up the Missouri River to the mountains and then, crossing them, to find a route to the Pacific Ocean. They were to report to the Government upon the rivers and mountains, the best routes for traffic, the character of the Indian tribes, the natural products, minerals, and wild animals of the region.

In the original party there were twenty-eight, fourteen being soldiers of the regular army. They were carefully picked men. Besides, there were nine boatmen and some soldiers who were to go as far as the Mandan tribes. They equipped themselves with three boats, the largest being a keel boat fifty-five feet in length and supplied with twenty-two oars and a mast for a sail.

Early in the spring of 1804 they started from St. Louis and pushed up against the swift current of the Missouri River, which made their journey slow and laborious. In Missouri they found the country heavily wooded, but turning northward they came into the more open country where larger game abounded. Two French *voyageurs* who knew the country were with them to act as hunters and as interpreters with the Indians. At Council Bluffs they met chiefs of some of the Indian tribes and tried to explain to them the transfer of control of this whole country to the United

States Government. By the opening of the winter they came into the country of the Mandan Indians in Dakota, built log huts on an island in the river, hunted during the winter months, and made preparations for a further spring journey.

The next spring they followed the Missouri to the great falls, pushed up through the deep canyon called "the gate of the mountains," and found themselves in the midst of the wilderness of mountains at the headwaters of the Missouri. Game was scarce, the Indians were gone, and the passage over the main range was extremely difficult. Passing beyond the range, they found it impossible to go down the branch of the Columbia because of falls, rapids, and canyons. They turned back across the range, followed the valley northward a hundred miles, and finally broke a way across the range through snow and cold to a stream down which they were able to descend in boats. They came out of the mountains on the west side in a haggard, half-starved condition. But fish and food were plentiful, the Indians friendly, and they pushed down to the Columbia and on to the coast.

The second winter they spent near the ocean in a camp built on the banks of the Columbia, suffering much from the rainy weather and from lack of nourishing food. But they had accomplished the main purpose of their journey, explored a large area of absolutely unknown country, and were now ready to return.

Not finding an English ship with supplies as they expected, they turned back poorly furnished for the return journey across the mountains and plains. But

the Indians of the Columbia treated them well and supplied them with provisions and horses, and they reached the mountains before cold weather set in. From their previous experience they were able to shorten their trip across the mountains. Just east of the mountains they had some exciting adventures with the Indians and grizzly bears. One division of the party went down the Missouri in boats, the other passed down the Yellowstone, and they came together at the junction of the two rivers.

From this point the journey down the Missouri was easy and rapid, and they reached St. Louis without serious difficulty. They had lost but one man on the way. In spite of exposure, danger, and hardships of all kinds, the men had kept well. For nearly two years the party of Lewis and Clark had not been heard from, and many believed that all of them had perished.

They brought back full and interesting reports of the country, which were furnished to Congress and the President. They had traveled about 9,000 miles through a region almost completely unknown and had awakened a great interest in these new possessions.

This was the first of a series of exploring trips designed to make known the geography and resources of the country.

Pike on the Upper Mississippi. — Zebulon Pike took a boat voyage up the Upper Mississippi in 1805 to its sources in the lakes and made an interesting report to the Government. The next year he led a small company up the Missouri and across the plains till Pike's Peak was first seen and located and the sources of the Arkansas River traced into the mountains. The next

spring he moved down into what is now New Mexico, was arrested and held prisoner for invading Mexican territory with an armed force, but was later released.

Frémont's explorations. — The great pathfinder of the Rocky Mountains was John C. Frémont, who made his first expedition to the Rocky Mountains in 1842. On a second trip he passed across the Rockies, explored Salt Lake, traveled northwest to the Columbia River, returned south, and during the winter crossed the snow-covered Sierra Nevada Mountains into central California. During the War with Mexico he raised a force in California and won it for the United States. Later he traveled and explored the rivers and passes of the Rocky Mountains to find the best routes of travel and traffic between the East and the West. His explorations were largely beyond the Louisiana Purchase but included this region also.

These were a few of the pioneer explorers who traveled with small parties across the plains and mountains, enduring remarkable hardships and reporting to the Government and the American people the wonders of this vast new land.

The Florida Purchase. — The purchase of Louisiana was followed by other important purchases of territory which have continued to enlarge the land area of the United States. In 1819 Florida, which had been owned by Spain and had caused the United States much trouble by reason of Indian attacks and also by helping England as a base for carrying on the War of 1812, was purchased by the United States for five million dollars. This rounded out our territory in that direction, and since then Florida has become a flourish-

ing state, famous for fruit culture and much visited by Northern people as a place for winter residence.

Texas and Mexico. — The early history of Texas is one of the most thrilling stories of the American frontier. The rapid growth of Texas after the Civil War and especially in the last twenty years has made it one of the leading states in wealth and population.

Texas, which had become an independent state by revolting against Mexico, was admitted to the Union as a state in 1845.

Oregon. — The War with Mexico, which was largely undertaken for winning from Mexico the lands of the southwest, ended in the cession of a very large tract of land to the United States, including California and New Mexico and in fact all the land west of the Louisiana Purchase and south of Oregon. For this region the United States also paid Mexico fifteen millions, besides important claims amounting to three millions. With the incorporation of Texas and the Mexican cessions into the territory of the United States a large Spanish-Mexican population was taken. Thus the present boundaries (including the Gadsden Purchase) were established. Only a year later than the admission of Texas, 1846, the dispute about Oregon (between England and the United States) was settled by extending the old line of 49° westward to the Pacific. The Oregon country has since developed into the prosperous states of Washington and Oregon and parts of other states. The westward movement of the people and their occupation of all the territory now in the United States were thus provided for.

Alaska. — In 1867 the United States Government, under the leadership of Secretary Seward, purchased from Russia the Alaskan territory for \$7,200,000. It contained an area of 591,000 square miles or more than one half as much as the Louisiana Purchase. Alaska also in recent years has developed unexpected wealth in its gold mines, its coal and other minerals, its forests and fisheries.

In December, 1898, at the close of the War with Spain, the United States, by the payment of twenty million dollars, received full possession of Porto Rico and the Spanish islands of the West Indies, the island of Guam in the Pacific (one of the Ladrones), and the Philippines.

During the Spanish War, the Hawaiian Islands desired protection and annexation to the United States and were also taken into the possession of the Union.

Thus the long series of additions to our territory stretches out through our history and shows the aggressive character of our people in their westward movement.

In 1910 the territorial area of the United States (not including Alaska and the Philippines) was 3,026,789 square miles. With Alaska and the Philippines the area of the United States is 3,624,122 square miles.

QUESTIONS FOR STUDY

1. Why are outlines of large units an aggravation rather than a help to teachers?
2. What is meant by a complete demonstration?
3. Why did the Westerners demand the mouth of the Mississippi River?
4. What would have been the result of a strong French colony in Louisiana?

5. What arguments were offered against the purchase of Louisiana?

6. Sketch a map of the Louisiana Purchase showing its extent in comparison with other acquired territories.

7. Tell the important results of Lewis and Clark's Expedition.

8. Why are Frémont's explorations introduced in connection with the Louisiana Purchase?

9. Report upon the leading characters in early Texan history and their influence in securing Texas for the United States.

10. Make a map of North America showing the whole series of territorial expansions of the United States.

11. Make a list of the provinces once ruled by Spain but now lost to her. Locate them on the world map.

12. Make a report on the colonial territories of France in northern Africa and in eastern Asia.

13. What parts of the world outside of Europe have never been colonized by European states?

14. Study the world map to locate the present colonies of European states.

15. What benefit comes from this comparison of the leading colonizing nations?

16. Why should history and geography be studied together?

17. Make out the complete series of *large units* on Colonial Expansion.

CHAPTER X

REMARKS ON ORGANIZATION AS ILLUSTRATED BY THE LOUISIANA TOPIC AS A TYPE STUDY

The broad scope of this unit. — This project adequately worked out illustrates organization in four different aspects:

First, when treated in its purely historical relations, it brings together and focuses upon Jefferson's final action (his decision to make the purchase and his recommendation to Congress) a large amount of interesting historical data; namely, the previous history of French and Spanish explorations and claims; the determined ambition of Napoleon to found a strong French state in Louisiana; the westward progress of American settlements beyond the Alleghenies and their insistent demand that the United States control the mouth of the Mississippi even if it made war necessary; the European situation and Napoleon's sudden change of purpose and his offer to sell the whole of Louisiana; the surprise of the American envoys, Livingston and Monroe, over this astonishing proposal; the sharp dilemma into which President Jefferson was thrown when called upon to choose between what he considered his duty under the Constitution and the practical necessity for taking advantage of the situation and for securing this great accession of territory; and, finally,

the money question — how to raise this enormous sum for the purchase price.

Later followed the sending out of Lewis and Clark to explore and report on this vast, largely unknown territory, which was preceded by the official act of taking possession of the new territory at New Orleans.

Descriptively presented, this historic event and its probable outcome have a strong dramatic interest. At the crisis two notable historic personalities stand out strongly, Jefferson and Napoleon, while the diplomatic maneuvers of the envoys in France and the lively debates in Congress furnish an interesting background. As a sequel the journey of Lewis and Clark up the Missouri, across the Rockies, and down the Columbia to the Pacific is the most adventurous and significant exploration project in our Western history. A prospective survey of the results likely to flow from this great historic act will add much to its meaning. The whole Mississippi Valley to the Rocky Mountains is drawn into the Union with the promise of many new states. There is also more than a strong suggestion that the people will push on to the Pacific and thus complete the great westward movement.

The grouping of important facts about one center. — The characteristic feature of this unit of study is the wide range and variety of important historic data organized and focused upon this central topic. Around the simple fact of this purchase are grouped diplomacy at Paris and Washington, important legislative discussion and action in Congress and in the French chamber, a vast scheme of public finance, the decision of a great constitutional question of much significance

for the future, the strong personal traits of great historic characters, a crisis in European history, the westward expansion of settlement in America, and the opening up of a still larger area for exploration and settlement in the West. This is a powerful demonstration of the great extent and variety of historical materials that properly and wisely may be grouped around one central organizing idea.

Many phases of geography presented. — The second phase of organization wrapped up in this treatment of the Louisiana Purchase is the extensive incorporation of geography and other school studies with history. At the beginning and throughout the whole treatment of this subject, local and world maps are in constant use and geographical data are as essential to a proper understanding as history itself. General maps of America and of Europe, a special series of historical maps exhibiting this expansion in territory, step by step, the definite sketching on paper and on the blackboard of the Louisiana and later accessions, a detailed map of the course followed by Lewis and Clark, the early maps of exploration and discovery of European states in North America showing the influence of the Allegheny Mountains upon the Mississippi Valley and its settlements — all these phases of geography are essential to a real understanding of this central historic project. This geographic background is so determining that no rational separation between the historic and geographic data is possible. They are organized into one large whole which continues in one combined development through kindred topics later in the course.

Scientific data abundant. — Even the scientific features of the Louisiana topic come into prominence in the Lewis and Clark enterprise which was a combined geographic and scientific expedition sent out by the Government to explore and report on climate, products, plants and animals, mineral deposits, and the economic resources of this vast region. Even the study of Indian tribes, their characters and customs, was an important phase of their plan and purpose. Scientific experts attended the expedition for the purpose of collecting scientific data and materials. Ultimately these resources of the new region were what most concerned the American people in making this expensive purchase.

Arithmetical calculations contribute much. — Arithmetic is also put to good use in clearing up important questions relating to financial estimates and the extent of territorial claims. The necessary mathematical calculations involved in the study and comparison of areas, populations, land values, and costs offer an extensive field for problems in calculation. Such calculations are important because they bring into the topic a much sharper definition of meanings and values. For example, let the children figure out the value of the Louisiana tract at ten dollars per acre and compare the result with the purchase price and again at one hundred dollars per acre. Again, compare the sums paid out by the Government at various times for Louisiana, Florida, Mexico, Alaska, and the Philippines. What was the cost of the Lewis and Clark expedition, and how were the leaders and men of the party paid? Compare the land areas controlled by the United States with those of England, China, and other countries.

Effective language. — The language training involved in a series of lessons on the Louisiana Purchase, both oral and written, because of the variety and richness of the topics dealt with, gives the most effective kind of language development. An adequate reproduction of such lessons is more valuable than mere drills or formal exercises, because strong thought material contributes to independence and fullness of sentence construction. Such is the inevitable correlation of these important studies.

Life itself demands this grouping of studies. — A completely developed project like this is grounded in a life situation that naturally combines this related group of studies into an inseparable whole. Human activities, operating under natural and necessary conditions, gave birth to this practical organization of knowledge. The schoolmaster can not improve on this organization. He would better accept it and operate on this basis, for his purpose is to train children to an understanding of life itself as exhibited in such projects. The big organized topic is the natural product of a habit of thought which sees things in their proper, many-sided relations and in their larger groupings. There is no way of avoiding strong, central units of study if we think properly. This second stage of correlating important studies into family groups such as practical life everywhere exhibits involves an important reconstructive principle in curriculum making.

Survey of earlier territorial extensions. — The third aspect of organization in the treatment of the Louisiana Purchase is seen in the expansion of this topic to include the later accessions of territory down to the

present time. Indeed we may look backward to the territorial expansion of our country from the Colonial period on and compare Louisiana especially to the acquisition of the Northwest Territory at the close of the Revolution. In fact the conquest of the Northwest Territory by George Rogers Clark during the Revolution and Franklin's successful demand that the right of the colonies to this territory be allowed in the Treaty of Paris together make up one of the central topics in American history. As a full unit of study it should precede the treatment of the Louisiana Purchase and form one great link in the chain of territorial development.

Later acquisitions. — The Louisiana Purchase itself was not only the largest territory gained at any one time, but it settled once for all an acute constitutional question — the right or, at least, the power of the Federal Government to purchase new territory. This established a precedent which afterward held for important later extensions and purchases. The first of these was Florida, thus settling our boundaries on the southeast. The Texas cession, the Mexican purchase, including California and the Southwest, should be compared in extent and importance with the Louisiana Purchase. A careful study of the maps of these western sections of our country, in view of their present development of resources and of population, will give unusual zest and meaning to such comparisons. The Oregon claim was based in part upon the explorations of Lewis and Clark, who first opened up extensive portions of the Northwest. The settlement of the Oregon question rounded out our territories to the Western

seas. The methods by which these new lands were gained, whether by conquest or by purchase, are deserving of fair, unbiased judgment, with a full consideration of the motives that inspired our people in acquiring these territories. The acquisition of Alaska, the Philippines, Porto Rico, and Hawaii and the treatment of these as possessions of the United States close up this great period of westward expansion and also bring to the front important questions of Colonial policy and the right to govern the people of such acquired territories.

A complete historical cycle. — Out of a comparison of these acquisitions and of the problems involved there develops a long forward movement from the Colonial times to the present, showing a steady westward advance of population and a strong demand for more territory till our possession of the great central zone across North America was complete. The purchase of Louisiana is the central stadium in this more than century-long movement to determine the boundaries of a great nation. It is the nucleus around which we can organize and unify the whole great cycle of events. This plan of expanding the Louisiana project both backward and forward into a series of kindred topics developing through our whole national history gives a stronger significance and a permanent organization of knowledge on a life basis.

A framework for later inclusions. — Such an important and fundamental historical development, once mastered in a full and adequate survey, becomes then the framework into which we can fit constructively many other important related topics in our expanding

national life. For example, the great highways, canals, and railroads developed between the East and the expanding West are the immediate outcome of this westward growth in territory and of the flow of population into these new regions. Close upon the heels of this westward expansion comes the admission of new states into the Union with the really tremendous problems involved, as in the case of the admission of Missouri and of California. The admission of such vast territories into our domain has been called revolutionary because it compelled all Americans to expand their conceptions of national life to unheard-of proportions. Some of our great statesmen even were slow to grasp the meaning of these swift and colossal changes.

A comprehensive interpretation. — The Louisiana Purchase as a large national project lies midway in our American history between the early Colonial developments as its forerunners and the later expansions of the nineteenth century as its lineal successors. The spirit of this whole historic movement for three hundred years and more has been one of aggressive appropriation of new territory in the westward march of the people and of the Nation. The comparison of the Louisiana Purchase with these earlier and later projects of expansion brings into conspicuous evidence one of the powerful tendencies that interprets and unifies the whole of our American history.

A new and still greater teaching unit. — With this great topic completely mastered as a vantage ground we may take a glance — and more than a glance — at British Colonial development. In dipping into English Colonial history we soon find that we are dealing

with a more extensive and varied field of study and one closely akin to our topic of American expansion. In fact it is the same topic from the standpoint of another nation, quite differently conditioned. At some later point in the seventh or eighth grade a full treatment of England's Colonial expansion, as illustrated in India and one or two more of her great colonies, as Australia, will furnish us another typical life project belonging to the same series as the Louisiana Purchase. The history of the British Colonial Empire soon reveals itself as a marvelous introduction to modern history and geography from the European standpoint. But before making comparisons and drawing conclusions it will be wise to make such a study of England's possessions and how she gained them as will enable us to form a sound basis for comparison.

INDIA, A TYPICAL PROJECT IN BRITISH COLONIAL EXPANSION

Robert Clive. — The treaty of peace of 1763 which surrendered Canada to the British also established the British power in India where the French had again suffered defeat. A young clerk, Robert Clive, in the service of the East India Company was chiefly responsible for this success of the British in India. Both the French and English had established trading posts along the eastern coast of India and were competing for the rich trade in silk and oriental wares. One of the French leaders, Dupleix, decided to drive out the British and by establishing friendly relations with native princes secure the control of India and of the lucrative Eastern trade. Dupleix was at first completely suc-

cessful. When Madras and its fort were captured by the French, Clive had escaped in disguise to one of the smaller stations. Dupleix now joined forces with a powerful native prince and helped to establish him as ruler in southeast India, known as the Carnatic. At this juncture, when the French power was at its height and seemed to threaten the British merchants with complete ruin, Clive came to the front and offered to strike a blow in defense of the English company. With a small force of two hundred English and three hundred native soldiers he made a rapid march through storms to Arcot, the capital of the Indian prince, and captured its great fortress. Knowing that he would be fiercely attacked by the combined French and their allies, Clive strengthened his earthworks and gathered supplies. Here he was besieged for fifty-one days by an army that increased to ten thousand men who finally made a furious attack. But Clive was resolute and well prepared and drove them back. He soon after received help and succeeded later in defeating the French and in destroying largely the extraordinary power which Dupleix had built up in this part of India.

The Battle of Plassey. — Returning to England in 1750 on account of broken health, Clive was received with honor and treated as the hero of India. A few years later upon returning to India with restored health he was soon called upon to lead a small army against a native prince in Bengal who had committed a great crime against the English merchants by throwing a company of one hundred and forty-six into the "Black Hole" at Calcutta, where most of them perished. In the battle of Plassey which soon followed Clive, in

command of an army of three thousand men, only nine hundred of whom were British soldiers, defeated and scattered a great army of thirty thousand which had been brought against him by the Nabob of Bengal. This was followed by later victories which laid the foundations of British power in India and gave Clive great repute.

Warren Hastings. — A second great governor and ruler sent by the East India Company to India was Warren Hastings. In the period from 1773 to 1785 he subdued a number of Indian princes and extended the British power over northern and central India.

Cornwallis as Governor General. — All these early conquests were made under the direction of the East India Company, a body of British merchants in trade. Just after the close of the Revolutionary War the British Government assumed control of the affairs of the East India Company and appointed a Governor General to manage the political affairs of the colony, leaving the company the right to direct trade and commerce. Lord Cornwallis, who surrendered a British army at Yorktown, was the first Governor General of India, and he also enlarged the British influence by extending it into other provinces. For a long time the English continued to rule the vast populations of this Indian Empire and to bring new states under their control. While the English rulers introduced many improvements and administered justice better than the native princes, still there had been many injustices and wrong dealings on the part of the English, and there was a growing desire among the natives to throw off the British yoke.

The Indian Mutiny. — In 1857 this feeling broke forth in a great uprising, known as the Indian Mutiny or Sepoy Rebellion. Cruel massacres were perpetrated against the captured English, even against women and children. For a time it seemed as if the whole of India was casting off the foreign rulers. But the small forces of British troops in different cities bravely held their ground; they defeated the native troops in many battles; and by 1858 the superior discipline of the British had quelled the rebellion and restored order.

Victoria, Empress of India. — This terrible experience convinced the British people that the India Company was not qualified to manage the trade of this great empire. In 1858 a bill in Parliament transferred the entire authority over India to Queen Victoria and her government. A Secretary of State for India was appointed who sat as a member of the Cabinet. In 1877 Queen Victoria was proclaimed "Empress of India." At this time England ruled directly over 221,172,952 people in India. In addition to this the English power is exercised indirectly over 66,055,479 people in what are called the "Feudatory States."

Improvement projects worked out by the English. — During Macaulay's stay in India the English introduced a system of courts of law based on English practice but adapted to Indian customs. In this way a greatly improved method of administering justice among all the people was carried out. An extensive system of railroads has been built which has vastly improved the distribution of products. An elaborate scheme for constructing great irrigation projects has been put in operation along the large rivers which has

brought more than 50,000,000 acres of land under regular cultivation and thus largely prevented the distressing famines which were formerly common in India.

The great colony. — India is the greatest colony that any nation has ever ruled from a distance. In more recent times the English have been granting the people of India more freedom and a greater share in the management of their own affairs. For nearly a hundred and seventy years since the days of Clive, England has steadily extended and increased her power and influence in this most populous and wealthy of all provinces. During the World War India not only failed to take advantage of the situation to rise against England but even sent native armies into Europe to support the cause of England against her enemies.

India is known as a crown colony because its government and administration are in the hands of the English. The people of India have not yet been granted self-government. It is indeed a marvelous thing that a hundred thousand English have long exercised authority over a nation of 300,000,000 people.

South African colonies. — South Africa at Cape Town was settled first by the Dutch in 1650 and the district about the Cape was occupied by Dutch farmers till 1795 when the fort was captured by the British. Having been given back to the Dutch it was recaptured during a war with Holland in 1806 and finally secured to England by a payment of thirty million dollars to Holland.

The British Government was doubly desirous of securing this territory because it was the most important station on the old route between England and her

great possessions in India. Before the Suez Canal was built England greatly needed Cape Town as a naval station. Cape Town and settlement formed the best vantage ground from which to extend the power of England over South Africa. For a long time it was difficult to persuade Englishmen to settle in South Africa, and this colony remained for many years poorly developed. But in 1870 the diamond fields were opened up, and Englishmen flocked into Africa by way of Cape Town. England has had no end of serious troubles in South Africa with the Dutch Boers, with the fierce tribe of Kaffirs, with the Zulu tribes, and lastly with the South African Republic, called the "Transvaal." But she has gradually extended her domains northward against all opposition.

Convict settlements. — Australia, England's next most important colony in the East, has a wholly different history. It was first explored by Captain Cook in 1769–70. Its early settlement was by a convict class. It was so remote that the British Government decided to deport its prisoners taken from the jails to these far-away shores, where they were formed into penal settlements. For many years these unfortunates were transported to those distant settlements at the rate of two thousand to three thousand per year. Once there, they were under military control and were compelled to work to earn their food and other supplies. They suffered great hardships and were much abused by the soldiers who guarded them. Before 1836 it is estimated that one hundred and three thousand convicts had been transported by England to Australia and Tasmania. And in 1840 there were

forty thousand of these convicts living in Australia — more than half the population of the country at that time.

Rapid growth and improvement. — The introduction of sheep and the production of a fine quality of wool for export to England encouraged immigration. Cheap land also attracted settlers. The convicts were kept busy building roads and as servants to the farmers. In 1851 gold was discovered and people flocked to South Australia from all parts of the world. In a few years Melbourne had a population of two hundred thousand. Between the years 1850 and 1865 seven hundred sixty-one thousand people came to Australia, mostly of the English-speaking classes. Many of these were adventurers and a period of disorder followed. But the gold fever soon subsided, and people, turned more to the settled occupations of farming, stock raising, and commerce. Coal, copper, and silver were discovered in other parts of the country. Sugar and cotton plantations were developed in the warmer parts of Australia in the northeast. An excellent system of schools was established. Roads were built, and a railroad system to connect the colonies was begun.

A confederation of states. — As population and settlements increased, the different states began to come closer to each other and to work together for common interests. They began even to talk of a confederation of the Australian states under one general control. From 1852 on, the sentiment grew more favorable to the confederation of the colonies under one government and various conventions were held to devise a plan of union. A constitution similar to that

of the United States was worked out and adopted in 1900. This government which unites all the states of Australia into a federal union has a legislature of two houses elected by the people, a judiciary, and a Governor General appointed by the Crown.

The government of Australia is like that of Canada which is also a federation of states with independence in all local and purely Canadian affairs. Quite recently the South African colonies have formed a similar union of federated states which in time seems destined to grow into a powerful nation.

Three federal states. — Among the English colonies, therefore, there have developed three great federal states, Canada, Australia, and South Africa, all based upon an organization of government similar to that of the United States. New Zealand also is a free, self-governing state of Englishmen.

Crown colonies. — Nearly all the other colonies of England, like India, are crown colonies, that is, controlled directly by the government of England and without independent, law-making assemblies of their own choice. The English Parliament legislates for the crown colonies, such as India, the Sudan, Jamaica, and other islands in the West Indies and East Indies. The crown colonies are peopled by alien races not speaking the English tongue and not yet sufficiently developed to be fully self-governing.

The Mediterranean route to India. — With the building of the Suez Canal in 1869 a new and much shorter route to India was provided. Because of her great Colonial possessions in the East — India, Singapore, Hongkong, and the islands, Australia and New

Zealand — England found it most essential that she should control this Mediterranean route. Although the Canal was built by a French company, England bought a controlling interest in it and even secured a dominant influence in Egypt so as to better guard the Canal. By establishing great fortresses and coaling stations at Gibraltar, Malta, and Aden, this short route to India became a grand highway of English commerce and was powerfully guarded as an essential part of England's Colonial system.

Island colonies. — At various times, partly by wars with European states, England has gained possession of important islands in the East Indies, for example, Ceylon, parts of Borneo, and New Guinea; the Solomon and Fiji Islands; in the West Indies, Jamaica and the Windward group; in the Atlantic, the Falklands, St. Helena, the Bahamas, and the Bermudas; in the Pacific, several smaller groups.

In Africa and Asia, England has enlarged her territories by gradually increasing her "spheres of influence," as in the Sudan, and South Africa.

In these various ways the British Empire has grown till it comprises a land area of more than eleven million square miles or about one fifth of the total land area of the world. Much of this lies in the temperate zones and in the more habitable parts of the earth where the stronger races develop.

The United States was for one hundred and fifty years a part of the British Colonial system, but the American Revolution broke the connection with England. As soon as the colonies became established in a new nation, the United States at once started out on

its own course in territorial expansion, thus developing into a great world power.

In the last four centuries the growth in numbers of the English-speaking races has had a remarkable development, partly by the increase of population in the British Isles, partly in the English colonies, and even more in the United States.

England has been the chief colonizing nation of modern times and has spread Anglo-Saxon civilization and speech through the best parts of the world.

Spain's colonies. — In the first large schemes of colonization and conquest which followed the discoveries of Columbus and Magellan, Spain took the lead and gained possession of some of the finest portions of the world. By the conquests of the Spaniards in the West Indies, in Mexico, and in Peru, Spain quickly extended her rule over a large portion of South America and of the southern and western portions of North America. She gained also considerable possessions in the East Indies.

Spain's harsh rule and the loss of her colonies. — In all her colonizing schemes, however, Spain was a brutal conqueror, sacrificing everything to the desire for gold and plunder, instead of becoming a colonizer desirous of settling and developing these new countries. Spain ruled her colonies harshly and taxed them heavily for her own enrichment with very little regard for the welfare of the subject natives or even of the Spanish settlers. In consequence she soon lost a good share of her Colonial possessions. Mexico and the South American states revolted from Spain and, after some fifteen years of varying struggles with Spanish soldiers, by

1826 had gained independence and expelled the Spanish authority from all the states of North and South America. Spain did not seem to learn much by experience and continued her harsh rule in the West Indies which brought on a war with the United States and resulted in the loss of Cuba and the Philippines. To-day Spain rules over a few small islands and some little territory in Africa but has long ceased to figure as one of the great colonizing nations.

Portugal's colonies. — Portugal like Spain at one time had extensive Colonial possessions. In 1540 the Portuguese, who were the first to explore the west and east coasts of Africa, had a continuous line of possessions along both shores of Africa, on the mainland of India, and in islands of the East Indian seas. They had gained full control of the commerce of the East Indies, which at that time was the richest in the world, and they brought back immense wealth from their commercial and military expeditions. The Portuguese navigators and soldiers of that time were brave and reckless adventurers, and the nations of the East with their riches of gold, diamonds, spices, silks, and other fine fabrics fell an easy prey to them. Later they also gained and held for many years Brazil, the largest of the South American states. But Portugal did not long maintain this leadership. Like the Spaniards the Portuguese were harsh conquerors and plunderers, not wise rulers of conquered races. At present Portugal still keeps two large territories on the east and west coasts of Africa and a few islands in the Atlantic and in the East Indies, but her vast possessions, like those of Spain, passed out of her hands.

Other Colonial systems. — Next to England Holland has been most successful in gaining and holding important Colonial possessions, especially among the islands of the East Indies, as Java.

France also was one of the great colonizing nations, holding at one time the greater part of North America. At present France has extensive possessions in the north and west of Africa and in the borders of India and China.

Since Germany in the last forty years has come into prominent leadership in Europe, she has also tried to secure a hold upon important colonies. But Germany started too late in the race for colonies and secured only a few territories on the east and west coasts of Africa and a few islands in the Pacific, which were recently lost again.

Europe the source of colonization. — This study of the Colonial development of the European states since the times of Columbus shows that, while Europe is the smallest of the continents, the energetic European states during the last four hundred years have explored all the other continents, have sent out settlers to colonize the best parts of North and South America, Australia, and Africa, and have taken possession of and brought under their control many millions of the native races of these foreign lands. The great commercial water routes to all parts of the earth have been laid out by Europeans, and the commerce of the world to-day is carried almost entirely in the ships and under the control of Europeans.

Comparison of Colonial empires. — This somewhat extensive treatment of the British Colonial system

followed by a brief survey of the colonies of Spain and of other countries lays the basis for a profitable series of comparisons, first, between American expansion and British colonization; second, between England's own colonies showing remarkable variety and contrast; and third, between the English colonizing system and that of Spain and of other countries of Europe. The striking contrast between England's growth and Spain's decline in Colonial possessions, with the reasons that may be assigned for the difference, may set children to thinking on some very fundamental problems. England's wars of conquest in India and South Africa may be profitably compared with our own wars against the American Indians and with Mexico. They are found to be very similar problems. Why does England allow practical independence and self-government in Canada and Australia and yet impose her own laws upon India? In connection with the deporting of convicts to Australia it may be recalled that shiploads of criminals were sent to Virginia in the early days and of debtors to Georgia,¹ while by way of contrast the Puritans and Quakers were of a very strictly moral and religious order.

Geographical and historical expansion. — Such a studious and later comparative inquiry into the Colonial systems developed by the leading nations of Europe in the last four hundred years is a gradual opening out of world geography by following the very paths traveled by explorers and colonizers. A more vivid and life-like portrayal of lands and people, of climates and products, and of world relations would not be possible. The great traffic routes by sea and land are seen in their beginnings and are laid out along ocean ways

which commerce and travel have been following these hundreds of years till now. This historical development of geography is profoundly significant as an interpretation of the most powerful influences that have been at work shaping our world as it is to-day. History and geography move along together in absolute interdependence, while natural science and mathematics have been coöperative with such leading studies in this marvelous game of life.

A fourth great unit of study — the territorial settlements following the World War. — In concluding this series of great units of study, continuous in their development through the grades, we have one large topic still to mention which is the culmination of the series; namely, the redistribution of territories at the conclusion of the recent World War. This tearing down of old nationalities and setting up new states, the distribution among the Allies of conquered provinces, the determination of mandates, and the readjustments of territorial boundaries are perceived to be direct continuations of the powerful efforts at expansion which have marked the fundamental drift among energetic modern nations. This great topic comes last because it is last, because we can get little understanding of it without a knowledge of powerful colonization movements which have preceded it and have led up to it. The strong drift of modern nations toward territorial expansion and colonization, in view of the commercial and industrial advantages that spring from such imperial expansion, furnishes basal motivation for great national impulses and enterprises and offers an illuminating chapter in modern history.

OUTLINE OF THE LOUISIANA PURCHASE AND OF THE CONNECTED
SERIES OF GREAT UNITS OF WHICH IT IS ONE MEMBER

1. The purchase of Louisiana
 - The demand of the Western settlers
 - Napoleon and his project
 - His offer to sell Louisiana
 - Jefferson's dilemma and the decision
 - The Lewis and Clark expedition
 - Other Western explorers — Pike and Frémont
 - The acquisition of Florida
 - Texas and Mexico secured
 - The Oregon settlement
 - The Alaska purchase
 - The Spanish War and the Philippines
 - The broad review of early American exploration and territorial claims
 - The historical and geographical scope of this subject
 - Correlations with geography, science, arithmetic and language
 2. The Northwest Territory and later territorial extensions
 - A complete historical cycle
 - A large framework for the incorporation of later topics
 - A comprehensive interpretation of four hundred years of American history
- A STILL LARGER SUCCEEDING UNIT
3. The British Colonial system
 - Clive in India
 - Expansion of the Indian Empire
 - South Africa and Australia
 - The English self-governing colonies develop three great federal states
 - The crown colonies of England
 - Spanish colonies and their decay
 - Portuguese colonies — comparisons
 - Europe the center of modern Colonial growth and expansion
 - Comparison of Colonial empires
 - Modern geographical and historical expansion

A FOURTH GREAT UNIT OF STUDY IN THIS SERIES

4. Territorial settlements following the World War

This outline illustrates the serial development of a great unifying idea

QUESTIONS FOR STUDY

1. How much of European history and geography is needed to give a proper setting to this topic?

2. What are the specific scientific topics suggested by Lewis and Clark's Expedition?

3. Make out a series of six mathematical problems connected with the Louisiana territory.

4. In what particulars does the Louisiana topic illustrate the project idea in teaching?

5. How would you justify this grouping and concentration of earlier and later accessions of territory around the Louisiana Purchase as a centre?

6. To what extent is this treatment of India a suitable topic in the larger unit of England's Colonial expansion?

7. Make a map showing the English Colonial possessions in South Africa at the present time.

8. Compare Australia with South Africa and Canada in present population, in wealth, and in prospects for the future.

9. State the principal reasons why England wishes to control the Mediterranean route to India. Is it as important as the Panama Canal route?

10. In what ways is England's Colonial expansion similar to that of the United States? In what ways is it different?

CHAPTER XI

A SUGGESTED CURRICULUM

The following outline of large teaching units covers the fields of geography, history, science, and literature.

This outline of a curriculum compasses mainly five grades, from the fourth through the eighth. A short preliminary list is given also for primary grades, but the plan for the primary grades is not here worked out in full. The large topics start strongly in the fourth grade and are continued through the eighth.

About a dozen weighty topics — typical life projects — are suggested for each study in each of the five grades (fourth to eighth inclusive).

In the geography forty or more out of the sixty large units have been worked out and put in print and are included in the reference lists. Most of the remaining twenty have also been developed and tried out in the classroom but have not been printed for general use.

In history about half of the topics have been written up and put in print — especially the history stories and topics of the fourth and fifth grades. In the seventh and eighth grades historical books and materials are now available which contain a fuller discussion of these topics, but the teacher would need access to a moderate library to carry out this plan under present conditions. Where departmental teaching is carried on in the sixth,

seventh, and eighth grades, such a plan of dealing with large topics would be very appropriate.

The list of selections in literature is made up of complete stories, poems, and literary products now in common use. For some years teachers have been treating these subjects as literary wholes. It is suggested that by selecting fundamental types in literature each of these may become a center around which to group kindred selections for comparison. The basal or typical idea in a literary selection would need to be brought out in its full setting and then made the basis of a series of comparisons with other kindred and contrasted selections.

The selected science topics are also chosen with the idea of giving to each an elaborate treatment and of then working out comparisons with kindred topics so as to give a wider scope to the whole project. A few of these science topics have been tried out and are in printed form, but most of them would require study and elaboration by the teacher from special supplementary books dealing with science topics. It would be better to develop a few of these topics elaborately as types than to scatter broadly over the wide fields of science. We need more of these special subjects fully worked out and thus made available for teachers' use.

In accordance with this plan of handling twelve or less topics a year in each study one of these units or teaching projects would require from two to four weeks of study. At the rate of five lessons a week (from thirty to forty minutes each) this would allow from ten to twenty lessons to each large unit. This is not too

much time for the complete and thorough treatment of such large topics. This more expanded treatment of subjects is seen in the illustrative examples of type studies already presented. It may cause some surprise, however, to note that the second stage of expansion through numerous comparisons is really much more extensive than is properly indicated by these examples. In fact it is difficult to reveal the meaning of this varied thinking process except in the classroom. This expansive development of an idea into a national or world scope requires a large and unexpected expenditure of time. The full meaning of a type study is not brought to light until we discover a whole series of these wide-reaching relations which are now commonly overlooked. In just such ways we find out the comprehensive organizing power of a liberal idea and how it happens that a few such big topics bring together and organize the essentials of a course of study.

The main organization of the curriculum must center about these thought studies. The formal studies, reading, writing, and spelling, are in the process of adjusting themselves to these central content subjects. The tributary essential arts are coming to support this central plan of organization. The outlines of these formal studies and of arithmetic will not differ essentially from the courses now in vogue.

The typical projects developed in the courses in the industrial arts and in the household arts will fit suitably into this curriculum of large units. In fact these arts furnish the best simple, objective examples we have of typical life projects which are complete units of intelligent design and construction. Such an outline

course is given in the book, "*Teaching of Industrial Arts in the Elementary School*," published by The Macmillan Company.

The marked feature of the following course of study is its brevity, but the striking thing about each topic named is the wide extent of knowledge it reaches out for and organizes. The purpose of this brief outline is to simplify and at the same time enrich the study of these subjects in the school. This is accomplished, first, by omitting a large number of minor topics, and, second, by expanding the large topics into a full descriptive treatment.

The secret of success lies in this process of choosing out a few of the most important centers and types — a select few of the best history, geographic, or literary units — and of enlarging them to such an extent as to draw out their full educative value. We propose to organize around these centers a far stronger body of knowledge than children can get from a condensed and somewhat scrappy treatment of many topics. These big topics are prominently set forth in the outline, and a few of the main headings are suggested so as to give an inkling of the richness that lies behind. Each of these important units has coiled up within it a germinal idea which is its life principle, and to bring this out in full strength requires an elaborate treatment. The idea must have opportunity to germinate and grow and expand on a large scale, else it can never exhibit its true value.

We wish to avoid the foolish waste of spreading out over a multitude of subjects, large and small. An intensive treatment of a limited number of standard

units will give a comprehensive and well-connected survey of a whole school study and incidentally throw an important light upon a group of other studies.

In this course of study, also, there is a well-devised continuity of thought running through the entire plan from the third and fourth grade to the eighth. A few lines of thought are kept steadily developing from grade to grade on the basis of types. For example, in geography there is a series on rivers, a series on cities, on traffic routes, on manufacturing industries, on agricultural topics, on physiographic units. In history, the steady growth of ideas and institutions is a commanding characteristic. In every case later topics build on the base furnished by those types preceding them in the grades, and the later topics review those preceding by comparison. There are no static, formal reviews of topics previously studied. The older types furnish standards of measure upon which to interpret and estimate the worth of the new. This is one form of review that necessitates real thinking and combines the new with the old by a steady process of growth.

How do these important units of study relate themselves to the textbooks in common use? Teachers have been trying to find out what are the centrally important topics among the greater number presented in the books. This course will enable them to discover these centers and to focus attention upon them. It is admitted on all sides that a fuller treatment is required of these central topics. The references given in each grade are to the special pamphlets and books which furnish this enlarged treatment of typical units. A large number of these monographs on special topics

have been worked out and printed and are now within the reach of teachers and can even be put into the hands of children. These pamphlets can be used in connection with any of the regular geography texts as a direct means of enriching and organizing the main subjects of study. There is an almost universal demand in the schools for larger and richer supplementary materials with which to reënforce the brief statements of the regular textbooks.

In conclusion we may say that the superiority for educative purposes of these controlling units of thought, intensively studied, over the brief and shallow treatment of numerous smaller topics is generally acknowledged. Even the textbooks are beginning to show a preference for larger topics and richer treatment. The present need of the schools is a marked simplification and an expansive enrichment of the main subjects of study. This will give children the right impulse, put classroom method on a stronger basis, and make the course of study as a whole progressive and dynamic in its influence.

HISTORY

PRIMARY GRADES

Stories of the home state — Early explorers and settlers

Biographies of local celebrities

Log houses and stockades of the pioneers

Fireplaces; modes of dress; of cooking; of travel

Stories of Indian life and danger

Primitive modes of living

Birthday celebrations — Washington, Lincoln, Lee

Stories of their childhood and early life

Thanksgiving and Christmas celebrations

Songs and dramatic exercises

Excursions to places of local historical interest

Visits to monuments and houses

Arbor Day and tree planting

Stories of famous trees and forests

Decoration Day

Stories of heroes

Other national holidays

Patriotic poems and songs

The story of the flag — The flag salute

Flag Day exercises

FOURTH B GRADE

1. Columbus — First voyage

Magellan's voyage

Cabot's explorations

2. De Soto — Spanish explorer

Cortez — Mexico

Pizarro — Peru

Coronado — Southwest United States

FOURTH A GRADE

1. La Salle, French explorer — Great Lakes and Mississippi

Hennepin — Upper Mississippi

Joliet and Marquette

Champlain — Lake explorer

2. John Smith — Virginia and New England

Hudson — Hudson River

Raleigh — Attempts at settling North Carolina

Pilgrims

3. Daniel Boone — across mountains into Kentucky

Robertson and Sevier — in Tennessee

George Rogers Clark

REFERENCES

Pioneer History Stories, three volumes; The Macmillan Company

1. *Pioneers on Land and Sea*

2. *Pioneers of the Mississippi Valley*

3. *Pioneers of the Rocky Mountains and the West*

FIFTH B GRADE

1. Drake's voyage in the *Golden Hind*
Queen Elizabeth
The Spanish Armada
2. Lewis and Clark's expedition
Whitman and the Oregon Country
3. Frémont's exploration in the Rocky Mountains
Pike and the Pike's Peak region
Major Powell's trip down the Grand Canyon
4. The gold discoveries and the forty-niners
Later gold discoveries in Colorado and in the Klondike

FIFTH A GRADE

1. Washington's early life — a surveyor
Braddock's defeat — Great Meadows
2. Lincoln's early life in Kentucky and Indiana
Trip down the Mississippi in a flatboat
3. King John and *Magna Charta*
Growth of English liberty
4. Oliver Cromwell and Charles I
The Puritan Commonwealth

REFERENCES

Pioneer History Stories, three volumes; The Macmillan Company
Life of Washington, Scudder; Houghton Mifflin Company
Life of Lincoln, G. H. Putnam; G. P. Putnam's Sons
Essay on Lincoln, Schurz; Houghton Mifflin Company

SIXTH GRADE

1. The Virginia Plantation — an aristocracy of plantation owners
Cotton and sugar plantations
Plantation life in the South
2. The town meeting in Massachusetts — Local self-government
The General Court of Massachusetts
Colonial Assemblies

3. The Dutch settlement of Manhattan — The patroons
Customs of the Dutch; the Puritans; the Quakers
4. William Penn — Struggle for religious toleration in
England
The settlement of Pennsylvania
Roger Williams
5. The Iroquois or Six Nations — The Long House
The Indian Confederacy
Other Indian tribes
6. Bacon's Rebellion in Virginia — Conflict with the
governor
Andros, Shirley, and other governors
7. Franklin's life during Colonial times
Other characters of the Colonial period
8. Conquest of Canada — Montcalm and Wolfe
Treaty of 1763
9. Wayne's defeat of the Western Indians
Jackson; Harrison; Pontiac; Black Hawk
10. The Purchase of Louisiana — Jefferson
Later extension of territory

REFERENCES

John Fiske's works; Houghton Mifflin Company
The Beginnings of New England
Old Virginia and Her Neighbors
The Dutch and Quaker Settlements
The Autobiography of Benjamin Franklin
Type Studies and Lesson Plans: Purchase of Louisiana;
The George Peabody College for Teachers

SEVENTH GRADE

1. Samuel Adams and the causes leading to the Revolution
Other leaders of revolt
Patrick Henry
2. The Declaration of Independence — Jefferson
3. Washington's early campaigns — Events about Boston,
New York and the New Jersey retreat

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4. Burgoyne's Campaign — Early success
Defeat and surrender
Results in England and France
5. The Continental Congress — Leading men
Robert Morris and financing the war
6. John Paul Jones — The *Bon Homme Richard*
Other sea battles of the war
7. The Southern campaign — Gates and Greene in the Carolinas
Washington's campaign against Yorktown
8. Franklin in France during the Revolution
The French alliance
The Treaty of Paris
9. The convention of 1787 and making a constitution
Leading men; compromises; ratification
10. Hamilton and the funding of the debts
The financial system and public credit
11. The Missouri Compromise of 1820
Early history of slavery
Its influence and later development
12. The Monroe Doctrine

REFERENCES

Life of Samuel Adams, American Statesmen Series: Houghton Mifflin Company
George Washington, Scudder; Houghton Mifflin Company
The War of Independence, John Fiske; Houghton Mifflin Company
The Life of Franklin, More; Houghton Mifflin Company
Alexander Hamilton, Conant; Houghton Mifflin Company
The Critical Period, John Fiske; Houghton Mifflin Company

EIGHTH GRADE

1. Andrew Jackson, the leader of Democracy
2. Webster and the defense of the Union — The Webster-Hayne debate
Southern leaders; Calhoun
3. The Northwest Territory and the Ordinance of 1787

4. The history and growth of slavery
The compromise of 1850; Henry Clay
5. Lincoln and Douglas debate
Lincoln; campaigns of the war
6. Reconstruction of the Southern States
The impeachment of Johnson
7. Immigration from Europe
Later growth of immigration; laws
8. Great inventions — telegraph, reaper, sewing machine
Later electrical discoveries and inventions
9. Civil Service Reform — Expansion of Civil Service
Growth of the Post Office system
10. The great expositions
Philadelphia; Chicago; St. Louis; San Francisco
11. The Spanish-American War
A new Colonial policy and its relation to the world
12. America's part in the World War
Results

REFERENCES

Andrew Jackson, Brown; Houghton Mifflin Company
Side Lights on American History, Elson; The Macmillan Company
The Story of Great Inventions, Burns; Harper and Brothers
The Growth of the American Nation, Judson; The Macmillan Company
The Webster-Hayne Debate; Houghton Mifflin Company
Great Epochs in American History, six volumes; Funk and Wagnalls Company

GEOGRAPHY

FOURTH GRADE

1. The Hudson River — The Atlantic coastal rivers
2. The White Mountains as a summer resort
Other summer resorts among the Alleghenies and on the coast
3. Gloucester and codfishing on the Banks
Other fisheries along the Atlantic and Pacific coasts

4. A lumber mill in Maine
Lumbering and forest areas of the United States
5. Truck farming and fruit growing along the Atlantic coast
Other trucking and fruit interests in the United States
6. Boston, a capital city — Historical buildings
Other capital cities in the states, as Albany, Springfield
7. A soft-coal mine in Pennsylvania — Anthracite mining
The coal areas in the United States and shipments
8. Niagara Falls, scenery, whirlpool, and gorge
Other falls and scenic features; water power
9. Chicago and causes of its growth
Other Lake cities; harbors and shipments
10. The first steamboat on the Ohio and Mississippi Rivers
Steamboats on rivers and lakes and ocean
11. A prairie corn farm in Illinois — Stock raising
The Corn Belt and corn production of the United States
12. The Dakota wheat farm — Minneapolis mills
The wheat areas and milling centers of the United States

REFERENCES

Type Studies and Lesson Plans of the George Peabody College series as follows:

The First Steamboat on the Ohio and Mississippi

Corn and Cotton

The North Dakota Wheat Farm

Type Studies from United States Geography, twenty-four complete type studies, Charles A. McMurry; The Macmillan Company

Elementary Geography, McMurry and Parkins; The Macmillan Company

Supplementary Volumes of State Geography, The Macmillan Company

FIFTH GRADE

1. A cotton plantation in Georgia
The Cotton Belt and cotton production and shipment

2. The Muscle Shoals on the Tennessee River — Hydro-electric power
Other water powers on rivers of the United States
3. New Orleans as a Gulf port — River and railroad trade
Other Gulf ports and shipments
4. A sugar plantation in Louisiana — Sugar mills and factories
Sugar production in Cuba; beet sugar
5. An oil well in Texas — Pipe lines; oil steamers
Location of oil-producing areas of the United States
6. A cattle ranch in Montana — The round-up
Cattle shipments; stockyards at Kansas City, etc.
7. The Yellowstone Park — National control
Other Western parks and mountain resorts
8. A gold mine in Colorado — Stamp mills and smelters
Gold, silver, and copper mines and their location
9. The Salt River irrigation project
Irrigation districts in the West
10. San Francisco, its harbors and shipping
Seaports along the West coast; trade of the Pacific
11. Crossing the Cascades — Heavy forests
The Western mountains' effect on rainfall and climate
12. A National Forest Reserve — Forest conservation
Forest reserves and forestry in the United States

REFERENCES

Type Studies and Lesson Plans of The George Peabody College series as follows:

Corn and Cotton

The Muscle Shoals

New Orleans as a Gulfport

The Salt River Project and Irrigation

The Golden Gate and Crossing the Cascades

Type Studies from United States Geography, Charles A.

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The story of Morse and the first telegraph
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The relation of circulation to digestion and respiration
The story of Harvey and his discovery
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Story of Marconi
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Pure water, fresh air, wholesome food
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Gutenberg and the first printing
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The story of Edison and his experiments
2. The preserving of foods — Food adulteration
Canning, drying, refrigeration

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The story of Galileo
1. The hothouse — Tropical plants; plan of building
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- The Last of the Mohicans (Cooper)
 - Other Leather Stocking Tales
- Tom Brown's School Days (Hughes)
 - Sir Roger De Coverley (Addison)
- Evangeline (Longfellow)
 - Marmion (Scott)
- The Tempest (Shakespeare)
 - Old Pipes and the Dryad (Stockton)
- Webster's Bunker Hill Oration
 - Patrick Henry's Speech
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EIGHTH GRADE

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 - Peter the Great (Motley)
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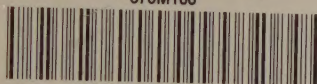
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